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Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown

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Copyright enforcement was one of the early challenges to the rule of law on the internet and has shaped its development since the early 1990s. The Notice and Takedown (N&TD) regime, enacted in the Digital Millennium Copyright Act, offered online intermediaries immunity from liability in exchange for removing allegedly infringing materials upon receiving notice from rights holders. The unequivocal power of rights holders to request removal and the strong incentives for online intermediaries to remove content upon receiving a such notice have turned the N&TD regime into a robust clean-up mechanism for removing any unwarranted content.

The N&TD procedure applies to private facilities, makes use of proprietary software, and is administered by private companies. This enforcement procedure is nontransparent and lacks sufficient legal or public oversight. Unlike copyright enforcement in court, where decisions are made public, we know very little about the actual implementation of the N&TD regime: Which players make use of the system? Who is targeted? What materials get removed? How effective is the removal of infringing materials, and does it comply with copyright law?

This Article offers empirical evidence on the implementation of the N&TD regime based on the systematic coding and analysis of a large-scale data-set of removal requests sent to Google Search.

The findings shed light on the major changes that have taken place in copyright enforcement following the transition to the online arena over the past decade. Analysis of the data reveals that the N&TD procedure has been extensively used to remove noninfringing materials, and most removal requests pertained to allegedly inaccurate, defamatory, or misleading content. These findings raise serious concerns that the N&TD procedure is becoming fertile ground for misuse. Moreover, online enforcement is dominated by multinational companies, which prefer to target global intermediaries rather than attempt to remove materials hosted by local platforms. This may lead to underenforcement of copyright online, as the exclusive focus on removal of links to allegedly infringing materials may limit

access to these materials, yet fail to actually remove these same materials. The local hosting platforms which facilitates access to repeat infringements, are widely known within the relevant community of users. This calls into question the effectiveness of this enforcement strategy. At the same time, however, the data demonstrates instances of overenforcement, where some materials have been removed on questionable grounds. Thus, the findings raise concerns over the implications of the N&TD regime for access to knowledge and freedom of speech. Overall, the study shows that in the absence of sufficient legal oversight, the N&TD regime is vulnerable to misuse, carrying consequences to copyright goals, access to justice, and due process. By uncovering the invisible dynamics at work in online copyright enforcement, this Article may contribute to identifying the challenges facing policymakers in shaping online enforcement procedures and developing the appropriate measures to address them.

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Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown

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INTRODUCTION

The Notice and Takedown (N&TD) regime, enacted in the U.S. Digital Millennium Copyright Act (DMCA), has become a prominent standard of online copyright enforcement. Since the late 1990s, this legal regime has offered online intermediaries immunity from copyright liability, in exchange for removing allegedly infringing materials upon receiving a notice from rights holders.[1]

The principle premises of this legal regime have been adopted in many places outside the United States in online disputes concerning intellectual property rights, defamatory content, and to some extent in implementation of the controversial right to be forgotten.[2] More

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[1] Digital Millennium Copyright Act, Pub. L. No. 105–304, 112 Stat. 2860. In Europe, this legal regime is rooted in the Electronic Commerce Directive. *See* Council Directive 2000/31, On Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market ("Directive on Electronic Commerce"), 2000 O.J. (L 178) 1.

[2] Ana Azurmendi, *The Spanish Origins of the European "Right to Be Forgotten": The Mario Costeja and Les Alfacs Cases*, INTERNET MONITOR 2014: REFLECTIONS ON THE DIGITAL WORLD 43 (2014).

importantly, the DMCA has become a de facto global standard for addressing online copyright infringements, since the vast majority of removal requests are sent to global platforms, which are U.S.-based companies subject to the DMCA.[3]

The statutory safe harbor established under the DMCA was intended to strike a balance. On the one hand, it sought to address the growing difficulty of enforcing copyright online by providing online intermediaries strong incentives to collaborate with rights holders in detecting and removing infringing materials.[4] On the other hand, it sought to enable online intermediaries to facilitate the free flow of information without undue filtering and interference.[5]

Notwithstanding its significance, little is known about how the N&TD procedure is applied, what its impact is, and how it affects copyright enforcement and access to noninfringing materials. N&TD procedures lack transparency. They take place in private facilities and are administered by private companies.[6] Moreover, these procedures are now implemented by algorithms: rights holders employ algorithms to track online infringements and to file removal requests with online intermediaries.[7] Similarly, online intermediaries use automated systems to adjudicate and execute removal requests.[8] These algorithms are opaque and are often kept confidential and protected by intellectual property.[9] Overall, unlike copyright enforcement in courts, where decisions are made public, we know very little about the N&TD practice: Which players make use of the system? Which procedures are

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[3] *See* Jennifer M. Urban, Joe Karaganis & Brianna L. Schofield, *Notice and Takedown in Everyday Practice*, U.C. BERKELEY PUB. L. & LEGAL THEORY RES. PAPER SERIES 19 (2017) (noting that the DMCA's N&TD framework has been "adopted in jurisdictions around the world" and "has now been 'woven into the fabric' of much of the Web world-wide").

[4] *Id.* at 17; S. REP. No. 105-190, at 20 (1998); H. R. REP. No. 105-551, pt. 2, at 49 (1998).

[5] Nicholas W. Bramble, *Safe Harbors and the National Information Infrastructure*, 64 HASTINGS L.J. 325, 355–9 (2013). *See also In re* Charter Commc'ns, Inc., 393 F.3d 771, 774 (8th Cir. 2005) (explaining that the DMCA "was designed to strike a balance between the interests of ISPs in avoiding liability for infringing use of their services and the interest of copyright owners in protecting their intellectual property and minimizing online piracy").

[6] *See id.* at 8 (noting that N&TD relies on private notices and actions by private parties which has led it to operate "without public visibility into the practices of rightsholders, OSPs, and alleged infringers").

[7] Joe Karaganis & Jennifer Urban, *The Rise of the Robo Notice*, 58 COMM. ACM 28, 28–30 (2015).

[8] Annemarie Bridy, *Copyright's Digital Deputies: DMCA-Plus Enforcement by Internet Intermediaries*, *in* RESEARCH HANDBOOK ON ELECTRONIC COMMERCE LAW 185 (John A. Rothchild ed., 2016); Maayan Perel & Niva Elkin-Koren, *Accountability in Algorithmic Copyright Enforcement*, 19 STAN. TECH. L. REV. 473, 517 (2016); Matthew Sag, *Internet Safe Harbors and the Transformation of Copyright Law*, 93 NOTRE DAME L. REV. 499 (2017).

[9] Jenna Burrell, *How the Machine 'Thinks': Understanding Opacity in Machine Learning Algorithms*, 3 BIG DATA & SOC'Y 1 (2016); *see generally* FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION (2015).

applied and how? Who is targeted? What materials are removed? How effective is the N&TD procedure? And does it serve the goals of copyright law?

This Article offers empirical evidence on these questions, based on the systematic coding and analysis of a large-scale random sample of 10,000 removal requests sent to Google Search regarding allegedly infringing materials on .il websites.[10]

The findings show that, in effect, the unequivocal power of rights holders to request removals and the strong incentives for online intermediaries to remove content upon receiving such notice have turned the N&TD regime into a robust clean-up mechanism for removing any unwarranted content.[11]

The findings further demonstrate some of the risks involved in enabling a robust enforcement procedure that lacks sufficient legal oversight. More specifically, the study shows that the N&TD procedure has been extensively used to remove noninfringing materials, which had little to do with copyright. Hence, most of the DMCA removal requests analyzed in this study pertained to allegedly inaccurate, defamatory, or misleading content. These findings raise serious concerns that the N&TD procedure is becoming fertile ground for misuse. Even more troubling is that a significant number of such requests have been submitted by a single entity, taking advantage of the regulatory enforcement system for purposes other than those intended.[12] These findings underscore the vulnerability to fraud and misuse of this nontransparent automated enforcement system. The automated removal, without scrutinizing the claims of the parties, led to overenforcement and ended up in the removal of noninfringing materials.

At the same time, however, the findings raise doubts regarding the effectiveness of N&TD procedures for the removal of harmful online content. Online enforcement is dominated by a handful of repeat players, mostly multinational companies, and mostly administered by professional agents.[13] The enforcement strategy revealed by the study shows that these players generally prefer to target global intermediaries rather than local platforms. This choice may lead to underenforcement. Indeed, the removal of links to allegedly infringing materials on global platforms may reduce access to these materials. Yet, this strategy fails to remove the infringing materials themselves from the hosting facilities. When the allegedly infringing materials are still available on popular

[10] The domain ".il" is the domain code for Israel. Each notice can contain an unlimited number of removal requests; therefore, the analysis focused only on removal requests referring to Israeli domains. *See infra* Part II.A.

[11] *See infra* Part III.B.1.

[12] *See infra* Part II.B.2.

[13] *See infra* Part II.B.3.

websites, which are familiar to users who seek such materials, the effectiveness of this enforcement strategy becomes dubious.

Overall, the study shows that the privatization of copyright enforcement, as implemented by the N&TD procedures, has failed to give proper weight to the public interest. Given the strong incentives for online intermediaries to promptly remove any material upon receiving a notice, the enforcement strategies employed by rights holders may lead to overenforcement and subsequently fail to advance copyright goals.

The empirical research discussed in this Article offers a rare opportunity to explore the enforcement proceedings involving online intermediaries, which are normally concealed behind a veil of code.[14] This exploration might be important to better understand some key features of online copyright enforcement and the risks and opportunities involved. This may also carry some implications for enforcement involving online intermediaries in other fields, such as the right to be forgotten[15] or defamation claims.[16] In addition, this study offers a snapshot of online copyright enforcement. Despite the considerable recent popularity of empirical legal studies,[17] empirical studies of copyright law have attracted relatively limited attention,[18] and only a few empirical studies focus on copyright enforcement practices.[19]

The Article proceeds as follows: Part I introduces the legal doctrine governing the N&TD procedures. Part II presents the research findings

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[14] Perel & Elkin-Koren, *supra* note 9, at 517.

[15] Azurmendi, *supra* note 2, at 43.

[16] Mohamed Saeh, *Online Defamation and Intermediaries' Liability: International* 1 (Sept. 30, 2012), http://ssrn.com/abstract=2191844 [https://perma.cc/A8ZF-T2YQ].

[17] Christopher A. Cotropia & James Gibson, *Copyright's Topography: An Empirical Study of Copyright Litigation*, 92 TEX. L. REV. 1981, 1983 (2014).

[18] Michael Heise, *The Past, Present, and Future of Empirical Legal Scholarship: Judicial Decision Making and the New Empiricism*, 2002 U. ILL. L. REV. 819 (2002); *see also* Michael Heise, *The Importance of Being Empirical*, 26 PEPP. L. REV. 807, 811 n.16 (1999); Matthew Sag, *Empirical Studies of Copyright Litigation: Nature of Suit Coding* 1 (Loyola Univ. Chi. Sch. of Law Pub. Law & Legal Theory, Research Paper No. 2013-017, 2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2697447 [https://perma.cc/5FCX-NTQE].

[19] Sag, *supra* note 19, at 3 (describing how copyright cases are often mixed with other issues, so there are few empirical studies that properly focus on copyright litigation); Cotropia & Gibson, *supra* note 18, at 1982. For leading empirical studies conducted in the field of copyright litigation and serving as foundational works, see generally Barton Beebe, *An Empirical Study of U.S. Copyright Fair Use Opinions, 1978–2005*, 156 U. PA. L. REV. 549 (2008); Neil Weinstock Netanel, *Making Sense of Fair Use*, 15 LEWIS & CLARK L. REV. 715 (2011); Matthew Sag, *Predicting Fair Use*, 73 OHIO ST. L.J. 47 (2012); Matthew Sag, *IP Litigation in U.S. District Courts 1994–2014*, 101 IOWA L. REV. 1065 (2016); Pamela Samuelson, *Unbundling Fair Uses*, 77 FORDHAM L. REV. 2537 (2009); Matthew Sag, *Fairly Useful: An Empirical Study of Copyright's Fair Use Doctrine* (March 15, 2011), https://works.bepress.com/matthew_sag/11/ [https://perma.cc/4CPM-JTBX]; Kris Erickson & Martin Kretschmer, *'This Video is Unavailable': Analyzing Copyright Takedown of User-Generated Content on YouTube*, 9(1) J. INTELL. PROP., INFO. TECH. & ECOM. L. (forthcoming 2018), (analyzing factors that motivate takedown of user-generated content on YouTube).

on the implementation of the N&TD procedures in practice. Following a brief description of the methodology, this Part describes the scope of enforcement activity using the N&TD procedures and identifies the prominent players—blockbuster filers of removal requests and request targets. It further addresses the findings of potential system abuse, and examines whether and how the objectives of the copyright law are fulfilled. Part III analyzes the study's findings, which shed light on the major changes in copyright enforcement over recent decades following the transition to automatic procedure. These changes may have a significant impact on access to knowledge and freedom of speech, advancing copyright goals, access to justice, and due process. By uncovering the invisible dynamics at work, this analysis can contribute to refining the challenges facing policymakers in regulating online enforcement mechanisms.

I. THE LEGAL FRAMEWORK: COPYRIGHT ENFORCEMENT BY ONLINE INTERMEDIARIES

A. *The DMCA Safe-Harbor Regime*

Copyright enforcement has presented one of the greatest challenges to internet laws and shaped their development since the early 1990s. The ease of copying and distributing copyrighted materials by every end user connected to the network, using widely available devices, such as computers, tablets, and smartphones, has made it extremely difficult to identify, prosecute, and obtain damages from copyright infringers.

This systematic enforcement failure[20] generated heavy pressure on online intermediaries to actively remove allegedly infringing materials residing in their systems. At the same time, policymakers were concerned that holding online intermediaries liable for infringing materials posted by their users might result in massive liability that would have a chilling effect on investment in internet infrastructure and the development of interactive services.[21]

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[20] The "enforcement failure" raised serious doubts as to the relevance of copyright law in the information era and the effectiveness and wisdom of the enforcement of these laws in their present form. *See* Metro-Goldwyn-Mayer Studios Inc. v. Grokster Ltd., 545 U.S. 913, 928–29 (2005) (discussing the difficulty of enforcing copyright law with the development of technology); Ben Depoorter, Alain Van Hiel & Sven Vanneste, *Copyright Backlash*, 84 S. CAL. L. REV. 1251 (2011) (discussing how enforcement of copyright laws against file sharing has been unsuccessful); Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright*, FIRST MONDAY (Aug. 2, 1999), http://firstmonday.org/ojs/index.php/fm/article/view/684/594 [https://perma.cc/37H5-FZ7F] (discussing the difficulty of identifying what is copyrightable in coding and numbers); Pamela Samuelson, *Does Copyright Law Need to Be Reformed?*, 50 COMM. OF THE ACM 19 (2007) (suggesting that copyright law should be reformed to be simpler).

[21] *See* S. Rep. No. 105-190, at 8 (1998) ("Due to the ease with which digital works can be

Online intermediaries, often possessing deeper pockets than the direct infringers, soon became a target of copyright litigation. In *Religious Technology Center v. Netcom*, one of the first cases to decide the liability of internet service providers (ISPs), a federal district court ruled that although an ISP is not directly liable for copyright infringement committed by its users, it might be liable for contributory infringement if the provider *knew* or *should have known* of the infringement.[22] This decision increased the legal uncertainty among online intermediaries regarding the scope of their copyright liability: What constitutes knowledge of infringement? When are they required to act against infringing materials which have been made available by their users?

The "safe-harbor" regime, enacted by the DMCA in 1998, sought to offer greater legal certainty by defining what sort of action is required of online intermediaries, and by limiting their liability to online infringements committed by their users.[23] At the same time, the DMCA sought to address copyright infringement by encouraging online intermediaries to expeditiously remove allegedly infringing materials residing in their systems upon receiving a notice from the rights holder.[24]

The safe-harbor provisions established under Section 512 reflect a legislative bargain between online intermediaries and copyright owners. The law provides immunity to online service providers (OSPs)[25] that host infringing materials of subscribers,[26] or provide links to infringing

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copied and distributed worldwide virtually instantaneously, copyright owners will hesitate to make their works readily available on the Internet without reasonable assurance that they will be protected against massive piracy. . . . At the same time, without clarification of their liability, service providers may hesitate to make the necessary investment in the expansion of the speed and capacity of the Internet. In short, by limiting the liability of service providers, the DMCA ensures that the efficiency of the Internet will continue to improve and that the variety and quality of services on the Internet will continue to expand.").

[22] 907 F. Supp. 1361, 1373 (1995).

[23] Niva Elkin-Koren, *After Twenty Years: Revisiting the Copyright Liability of Online Intermediaries*, *in* 26 THE EVOLUTION AND EQUILIBRIUM OF COPYRIGHT IN THE DIGITAL AGE 29, 30 (Susy Frankel & Daniel Gervais eds., 2014).

[24] Annemarie Bridy, *Is Online Copyright Enforcement Scalable?*, 13 VAND. J. ENT. & TECH. L. 695 (2011).

[25] The statutory definition of a service provider is broad and covers internet access providers. *See, e.g.*, 17 U.S.C. § 512(k)(1)(B) ("[P]rovider of online services or network access, or the operator of facilities therefor."). OSPs that provide any of these four types of online services are eligible for protection from liability for copyright infringement: (a) transitory digital network communication, where an OSP acts as a "mere conduit" in providing internet access; (b) system caching; (c) information residing on systems or networks at the direction of a user (including hosting); and (d) providing information location tools, such as links. *Id.* at §§ 512 (a)–(d). The N&TD procedures addressed by this Article concern only hosting facilities and information-location tools (the third and fourth safe harbors).

[26] *Id.* at § 512 (c).

materials.[27] Compliance is voluntary.[28] OSPs that comply with the safe harbors are exempted from liability for damages, but not from injunctive or any other equitable relief.[29] OSP's are also exempted from liability for any claim based on the "good faith disabling of access to, or removal of, material or activity claimed to be infringing or based on facts or circumstances from which infringing activity is apparent,"[30] provided that the OSP took reasonable steps to promptly notify the subscriber of the removal[31] and complied with a counter notice if filed.[32] To take advantage of any of the safe harbors defined by the law, OSPs must comply with certain statutory threshold requirements. The OSP must not interfere with "standard technical measures" applied by copyright holders to protect their works, and must further reasonably implement a policy providing for the termination of repeat infringers.[33]

Additional requirements apply to OSPs engaging in hosting or linking to infringing materials. More specifically, Section 512(c) stipulates three conditions that an OSP must meet.[34] First, an OSP must not have "actual knowledge" of infringing content or an activity using infringing content on its system,[35] or be "aware of facts or circumstances from which infringing activity is apparent."[36] The latter is also known as the red-flag standard.[37] Second, an OSP must not obtain a "financial benefit that is directly attributable to the infringing activity, in a case in which the service provider has the right and ability to control such activity."[38]

Finally, OSPs must designate an agent to receive notifications of claimed infringements from copyright owners, register the agent with

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[27] *Id.* at § 512 (d).

[28] Note that noncompliance with the terms prescribed by the law is not in itself grounds for holding the intermediary liable. The law provides the intermediaries with a safe harbor. To establish liability of an OSP for infringing materials of its users, it is necessary to show that an infringement has been committed and that the OSP is either directly or indirectly liable for the infringement. Furthermore, some exemptions and limitations under copyright law, such as fair use, may also apply. *See* Jane C. Ginsburg, *Copyright 1992–2012: The Most Significant Development?*, 23 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 465, 494 (2013) (noting that providers may still invoke traditional copyright defenses).

[29] 17 U.S.C. § 512 (j).

[30] *Id.* at § 512 (g)(1).

[31] *Id.* at § 512 (g)(2).

[32] *Id.* at § 512 (g)(3).

[33] *Id.* at §§ 512 (a)–(d), (i).

[34] *Id.* at §§ 512 (c)(1)(A)(i)–(iii).

[35] *Id.* at §§ (c)(1)(A)(i), (d)(1)(A).

[36] *Id.* at § (c)(1)(A)(ii). Upon obtaining such knowledge or awareness, OSPs must expeditiously remove or disable access to the allegedly infringing materials from their systems. *Id.* at § (c)(1)(A)(iii).

[37] Viacom Int'l, Inc. v. YouTube, Inc., 676 F.3d 19, 31 (2d Cir. 2012).

[38] 17 U.S.C. §§ 512 (d)(2), (c)(1)(B) (providing information-location tools and hosting services, respectively).

the Copyright Office, and implement the N&TD procedure as defined by law.[39] Upon receiving notice from copyright holders or on their behalf, the OSP must act expeditiously to remove or disable access to the allegedly infringing materials.[40] OSPs have no duty to actively monitor their services for infringing content. The burden to monitor and locate infringements remains with the rights holders.[41]

The N&TD procedure provided by the law reflects the statutory goals of the safe-harbor regime pertaining to the interests of copyright holders, OSPs, and users.

First, the N&TD procedure offers copyright holders a relatively inexpensive and fast process for enforcement of copyright online. A removal request offers a direct and efficient legal remedy that can be obtained by the rights holders themselves, allowing them to reduce the potential harm caused by the infringement without resorting to more cumbersome and costly legal procedures. Moreover, this sort of remedy (removal) is immediate and quick, while seeking an injunction in court might last longer and might not be cost effective.

Another purpose intended by the safe-harbor regime was to offer greater certainty to OSPs concerning their copyright liability and the necessary steps OSPs must undertake to avoid it.[42] The statute provides detailed rules about the N&TD procedures. Accordingly, a copyright owner may send a notice to the OSP's designated agent. Section 512(c)(3) lists details to be included for the written notification to be effective, including contact information for the complaining party, identification of the allegedly infringing work and sufficient information to permit the OSP to locate it, and a statement that "the complaining party has a good faith belief that use of the material in the manner complained of is not authorized by the copyright owner, its agent, or the law."[43] Upon receiving such notice, an OSP must respond "expeditiously to remove, or disable access to, the material that is claimed to be infringing."[44]

Finally, the N&TD procedures offer some safeguards against unjustified removal of legitimate content. The unjustified removal of noninfringing materials may disrupt the delicate balance struck by

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[39] *Id.* at § 512 (c)(2).

[40] *Id.* at § 512 (c)(1)(C).

[41] *See id.* at § 512(m) ("Nothing in this section shall be construed to condition the applicability of subsections (a) through (d) on . . . (1) a service provider monitoring its service or affirmatively seeking facts indicating infringing activity.").

[42] *See* S. REP. No. 105-190, at 36 (1998) (noting that Title II of the DMCA was designed to "provide[ ] greater certainty to service providers concerning their legal exposure for infringements that may occur in the course of their activities").

[43] 17 U.S.C. § 512(c)(3).

[44] *Id.* at § 512(c)(1)(C).

copyright law between the interests of copyright holders in enforcing their rights, and the interest of users who seek to learn from works and build upon copyright materials.

The DMCA anticipated potential abuse of the extrajudicial and unaccountable removal power rendered under the statute, and therefore included several safeguards. One such mechanism is a "counter notice," which allows a user to contest the removal request.[45] To maintain its immunity under the N&TD regime, an OSP is required to take "reasonable steps promptly to notify the subscriber that it has removed or disabled access to the material,"[46] and promptly forward any counter notices from alleged infringers back to the original complainant.[47] A counter notice must include the following: (A) a physical or electronic signature; (B) identification of the material removed and its former location; (C) statement under penalty of perjury that the user believes in good faith that the material was mistakenly removed; and (D) the user's name, address, phone number, and consent to the jurisdiction of a federal district court.[48] After a notice is challenged by the user, the OSP might be required to reinstate the materials if the right holder fails to notify the intermediary of the lawsuit within ten to fourteen days after filing.[49] If a suit is filed, the content is removed until a judicial decision is made.

DMCA instructions, which are implemented by Google,[50] provide the option to file a counter notice.[51] Google enables online filing of removal requests, whereby the filer is asked to name the Google product her request relates to (for example, Google Search).[52] The filer is cautioned that the original notice may be sent to the copyright holder if Google has reason to suspect the validity of the complaint, and also that Google may present information from the notice at Google Transparency Report (GTR) and Lumen.[53]

Another mechanism to protect against misuse of the unaccountable removal power rendered under the statute is that the right holder must

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[45] *See id.* at §§ 512(g)(2)–(3).

[46] *Id.* at § 512(g)(2)(A).

[47] *Id.* at § 512(g)(2)(B).

[48] *Id.* at § 512(g)(3).

[49] *Id.* at § 512(g)(2). If, after ten to fourteen days, the complainant does not notify the webhost that it has filed a lawsuit, then the webhost must reinstate the contested material. Otherwise, the webhost risks losing its safe harbor and it may be found liable for the damages suffered by users whose content had been unlawfully restricted. *Id.* at § 512(g)(3).

[50] *How Google Fights Piracy*, GOOGLE (July 13, 2016), https://drive.google.com/file/d/0BwxyRPFduTN2TmpGajJ6TnRLaDA/view [https://perma.cc/FE58-QYVS].

[51] 17 U.S.C. §§ 512(g)(2)–(3).

[52] *Removing Content From Google*, GOOGLE, https://support.google.com/legal/troubleshooter/1114905?hl=en#ts=1115655%2C1282900 [https://perma.cc/KN56-MLN4] (last visited Sept. 11, 2017).

[53] *Id.*; *see also infra* notes 92–94 and accompanying text.

state that he has "a good faith belief" that the targeted use was not "authorized by the copyright owner, its agent, or the law."[54] Any party who files a notice without such good-faith belief may be liable for damages.[55]

These statutory measures seek to protect the rights of alleged infringers not to have their content removed without legal justification. These measures may further seek to protect the public interest in preventing groundless or arbitrary restrictions on freedom of expression.

B. *The DMCA in Practice*

In recent years, we have witnessed a dramatic change in the way the N&TD procedure is applied by online intermediaries. In response to the exponential growth of online piracy,[56] copyright holders have developed automated systems to track online infringements and automatically file takedown notifications with online intermediaries ("robo notices").[57] As further shown by the current study, robo notices are largely outsourced to agencies that specialize in automatically detecting alleged infringements.[58]

To address the sheer volume of notices, online intermediaries have also adapted automated systems for administrating removal requests. For example, Google enables filing a removal request through an online form[59] which asks the filer to indicate, among others, the specific infringing link that Google is requested to remove. Following the filing, Google removes the link, as required by the DMCA.[60]

More importantly, besides removal of infringing materials, some intermediaries have undertaken measures which exceed their legal obligations under the N&TD regime, and voluntarily offer additional enforcement measures to rights holders.[61] For instance, Google takes

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[54] 17 U.S.C. § 512 (c)(3)(v).

[55] *Id.* at § 512(f).

[56] *See* Annemarie Bridy and Daphne Keller, U.S. Copyright Office Section 512 Study: Comments in Response to Notice of Inquiry 2 (Mar. 30, 2016), https://ssrn.com/abstract=2757197 [https://perma.cc/ANE9-ZJ2C] ("Since the DMCA was enacted, the scale of online piracy has increased, and with it the number of legitimate DMCA requests—the bulk of them going from large copyright owners to large OSPs.").

[57] *See* Karaganis & Urban, *supra* note 8, at 28–30 (discussing how automated systems are being used to track online infringements and initiate N&TD procedures).

[58] *See infra* Figure 4.

[59] *Removing Content from Google*, *supra* note 53.

[60] *See* Jennifer M. Urban, Joe Karaganis & Brianna L. Schofield, *Notice and Takedown: Online Service Provider and Rightsholder Accounts of Everyday Practice*, 64 J. COPYRIGHT SOC'Y 371 (forthcoming 2018).

[61] *See* Bridy, *supra* note 9, at 189–91 (discussing the proactive monitoring and graduated-response protocols adopted by several of the largest ISPs, including YouTube and Google); Caleb Donaldson, *Beyond the DMCA: How Google Levarages Notice and Takedown at Scale*, LANDSLIDE, Nov./Dec. 2017 at 20–23.

voluntary measures against websites which are the target of a high number of removal requests.[62] Google's Pirate algorithm, revised in 2014, modifies its search results so that sites subject to a large number of removal requests are assigned a low rank at the bottom of the search results, where it is difficult to find them. YouTube's Content ID is another classic example.[63] Using a digital identifying code, Content ID can notify rights holders whenever a newly uploaded video matches a work that they own.[64] Rights holders can then choose to block or remove the content, share information, or monetize the content.[65] Voluntary measures may also include filtering the content before it is even uploaded, or takedown and staydown, which may involve an active search to make sure the content is not reuploaded.[66]

These voluntary measures have created a new arena for enforcing copyright, which operates parallel to the traditional arena of lawsuits filed in court.[67] Moreover, these measures are arguably exempted from the checks and balances crafted under the DMCA, as they take place on privately owned platforms, are often offered as a service to the right holder, and are governed by the intermediary's terms of use.[68]

Another important development is the globalization of the N&TD procedures. Over the two decades that have passed since Congress enacted the DMCA, the safe-harbor regime has become a global standard. First, the N&TD procedure has inspired many countries outside the United States and has become the go-to model in disputes concerning the infringement of intellectual property rights, and more.[69] For instance, the European E-Commerce Directive[70] introduced similar safe-harbor exemptions, but did not specify any takedown procedure. Second, beyond its influence as a model, the DMCA operates as the de

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[62] *Id.*; Amit Singhal, *An Update to Our Search Algorithms*, GOOGLE (Aug. 10, 2012), https://search.googleblog.com/2012/08/an-update-to-our-search-algorithms.html [https://perma.cc/7LKR-BW6U].

[63] *See* YouTube Help, *YouTube Content ID*, YOUTUBE (Sept. 28, 2010), https://www.youtube.com/watch?time_continue=6&v=9g2U12SsRns [https://perma.cc/N8T4-5EJJ] (describing YouTube's process for protecting copyright holders).

[64] *Id.*

[65] *Id.*

[66] Bridy, *supra* note 9, at 190, 195–96.

[67] Perel & Elkin-Koren, *Accountability, supra* note 9 (highlighting the distinction between regulated mechanisms of algorithmic copyright enforcement and voluntary mechanisms of algorithmic copyright enforcement).

[68] *Id.*

[69] *See* Miquel Peguera, *The DMCA Safe Harbors and Their European Counterparts: A Comparative Analysis of Some Common Problems*, 32 COLUM. J.L. & ARTS 481 (2009).

[70] Council Directive, *supra* note 1.

facto global standard since the majority of the removal requests are sent to U.S.-based companies.[71]

Israel is no exception. The N&TD procedure has been developed in Israel through case law. Like many jurisdictions outside the United States, Israeli law has no clear statutory framework that governs the N&TD procedure. The N&TD principles arise from the legal doctrine of contributory liability. In the landmark case of *Hebrew Univ. of Jerusalem v. Schocken*, the Israeli Supreme Court defined the scope of contributory liability in copyright cases.[72] Accordingly, liability for contributory infringement will apply when one knowingly and materially contributes to the infringing conduct of another. Israeli courts have applied the doctrine of contributory infringement to online intermediaries, holding that intermediaries will not be held directly liable for infringing materials posted by their users, but might be held liable if they knowingly contributed to the infringement. In the lower instances, Israeli courts have adopted the principle that hosting providers (i.e., online forums) and website managers should not be held liable for harmful content published by their users if they had no knowledge of the violation, and if they acted to remove the harmful material as soon as they learned about it.[73] Therefore, similar to U.S. law, online intermediaries might be subject to contributory liability for copyright infringing materials posted by their subscribers if they fail to remove the materials upon receiving a notice.[74]

Moreover, the top-ranked websites in Israel (e.g., Google, Facebook, YouTube) are owned by U.S.-based companies that implement the safe-harbor procedures of the DMCA.[75] Consequently, the N&TD procedure applies de facto to many online interactions in Israel, including those involving Google—which was explored in the present study.

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[71] *Id.* at 22 (citing Mary Meeker, *Internet Trends 2014*, at 130 (2014), http://www.kpcb.com/blog/2014-internet-trends [https://perma.cc/8C76-2CE2]); *see also* Council Directive 2000/31, 2000 O.J. (L 178/7) (stating that the intermediaries will be liable for copyright infringement if a notice has been filed, but there is no detailed arrangement which is similar to the DMCA).

[72] CA 5977/07 Hebrew Univ. of Jerusalem v. Schocken Publ'g Ltd. 64(3) PD 740 (2011) (Isr.). Note that liability for contributory copyright infringement under Israeli case law requires *actual knowledge* of the infringing acts. Constructive knowledge would be insufficient for establishing liability.

[73] CC (TA) 1559/05 Gilad v. Netvision Inc. (July 23, 2009) (Isr.); CC 64045/04 Magistraes Court (TA), "Al HaShulhan" Gastronomic Center v. ORT Israel (May 10, 2007) (Isr.).

[74] CC (CT) 567-08-09 ALIS, Ass'n for the Protection of Cinematic Works v. Rotter.net Ltd. (Aug. 8, 2011) (Isr.).

[75] SIMILARWEB, https://www.similarweb.com/top-websites/israel [https://perma.cc/F4WG-CX9Y] (last visited Jan. 11, 2018).

Since the N&TD procedure implemented by Google for content available in Israel is the same as the one implemented for content available in the United States, the Israeli case study offers an opportunity to explore how the N&TD procedure of the DMCA has shaped online copyright enforcement and access to online materials.

Since its enactment, the DMCA has remained controversial and subject to widespread criticism by both rights holders and free-speech advocates. Scholars have warned against the chilling effect of the safe harbor as its use has expanded beyond the protection of copyright.[76] Others have argued that, overall, the N&TD regime offers a relatively balanced solution to the online-enforcement challenge.[77] Several studies point to flaws in the implementation of the N&TD procedure, arguing that its implementation may violate freedom of expression on the internet, obstructs academic research, endangers the fair use of works, and prevents competition and new invention.[78] Copyright holders, on the other hand, argue that N&TD falls short of addressing online piracy, demanding that online intermediaries do more to protect their intellectual-property rights.[79]

However, little is known about how the N&TD procedures were actually implemented by copyright holders and online intermediaries, and how they affect copyright enforcement and access to online

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[76] *See* Jennifer M. Urban & Laura Quilter, *Efficient Process or "Chilling Effects"? Takedown Notices Under Section 512 of the Digital Millennium Copyright Act*, 22 SANTA CLARA COMPUT. & HIGH TECH. L.J. 621, 687–88 (2006) ("The surprising number of questionable takedowns we observed, taken in conjunction with the *ex-ante* removal of content, . . . suggest that few are wellserved by the current § 512 process, and some or many individuals, as well as public discourse and the Internet's value as an expressive platform, may be harmed."); Timothy Cahn & Ryan Bricker, *Rough Justice: Extending the DMCA's Self-Policing "Take-Down" Model Beyond Copyright Law*, GOLDEN GATE U. SCH. L. DIGITAL COMMONS (2012) (discussing how the DMCA leads to takedowns without notice to the user or opportunity to object, as well as without the protection of a cause of action for owner misrepresentation).

[77] *See, e.g.*, Jerome H. Reichman, Graeme B. Dinwoodie & Pamela Samuelson, *A Reverse Notice and Takedown Regime to Enable Public Interest Uses of Technically Protected Copyrighted Works*, 22 BERKELEY TECH. L.J. 981, 994 (2007).

[78] *See* Fred Von Lohmann, *Unintended Consequences: Twelve Years Under the DMCA*, ELEC. FRONTIER FOUND. 1 (Mar. 3, 2010), https://www.eff.org/files/eff-unintended-consequences-12-years.pdf [https://perma.cc/X4X8-2X6D] (discussing how the DMCA has not been used as it was originally intended); Elkin-Koren, *supra* note 24, at 14 (describing how the N&TD procedures enable intermediaries to limit expression by exercising control over the use of content).

[79] *See* Comments of the Motion Picture Ass'n of Am., Inc. 3 (Nov. 13, 2013), *submitted in* IN THE MATTER OF REQUEST FOR COMMENTS ON DEP'T OF COM. GREEN PAPER, Docket No. 130927852-3852-01 at 3, https://www.uspto.gov/sites/default/files/documents/Motion_Picture_Association_of_America_Comments.pdf [https://perma.cc/8UC4-VWXV] [hereinafter "MPAA"] ("All stakeholders in the Internet ecosystem—including search engines, advertising networks, payment processors, and cloud storage providers—should be actively seeking to reduce support for infringing websites. These parties should be engaging in serious discussions with copyright holders about taking commercially reasonable, technologically feasible steps to achieve that important goal.").

materials. The present empirical study, to which we now turn, seeks to fill this gap.

II. UNCOVERING THE PRACTICES OF ONLINE COPYRIGHT ENFORCEMENT

A. *Introduction and Methodology*

This Part presents the findings of an empirical study of copyright enforcement facilitated by online intermediaries. The study analyzed requests filed with Google Search to remove links to allegedly infringing materials from its search results. This case study offers a snapshot of copyright enforcement in practice. This could help us better understand the way the DMCA is actually applied and how it shapes the digital environment (law in action), moving beyond the theoretical legal analysis (law in books).[80]

The study systematically analyzed a large-scale random sample of 10,000 removal requests sent to Google Search regarding allegedly infringing materials on .il websites (Israeli websites). Israel serves as an instructive case study for drawing a detailed picture of the nature of copyright enforcement activities taking place through the N&TD regime. As noted, an N&TD procedure has been established by courts in Israel to address intermediaries' liability for various harms, including copyright infringement. Moreover, the implementation of N&TD by global intermediaries, such as Google, reflects U.S. law and complies with the DMCA.[81]

Google Search is a significant, albeit not exclusive, tool to find information and acquire access to online content. Content not accessible through it or relegated to the bottom of the search results might be difficult to locate. Consequently, removing links to allegedly infringing materials from search results can significantly reduce the traffic on the site.

Google has become a central arena for enforcing copyright.[82] Google regularly receives removal requests from apparent copyright owners to remove links to allegedly infringing materials from Google Search.[83] Removal requests are conveyed to Google through an online

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[80] Roscoe Pound, *Law in Books and Law in Action*, 44 AM. L. REV. 12, 15 (1910).

[81] *See infra* Part II.A (discussing Google's N&TD mechanism).

[82] *See* Edward Lee, *Recognizing Rights in Real Time: The Role of Google in the EU Right to Be Forgotten*, 49 U.C. DAVIS L. REV. 1017, 1080 (2016) (discussing Google's handling of copyright removal notices in accordance with the DMCA).

[83] *Transparency Report*, GOOGLE, https://www.google.com/transparencyreport/removals/copyright/?hl=en [https://perma.cc/7BVK-2GZE] (last visited Sept. 16, 2017).

form.[84] Each request lists the relevant Google product,[85] the sender's name, the copyright owner's name, and the particular webpages (URLs) that Google is asked to remove.[86] After receiving the removal request, Google removes the link, as required by the DMCA to acquire the safe-harbor exemption.[87]

To promote transparency in its enforcement activities, Google voluntarily publishes GTR on its website. The GTR presents data related to the removal requests received by Google from copyright holders, including information on the number of URL's requested to be removed, the entities that sent the requests and the copyright owners. It further includes information on the allegedly infringing materials, and the manner in which the requests were addressed.[88] Importantly, however, the data available in the GTR is incomplete in that it does not allow analysis of the removal requests themselves. In the current study, we used data derived from GTR only to analyze the scope of digital enforcement activity.[89]

In addition to the GTR, since 2002, Google has transferred the removal requests it receives to Lumen, a nonprofit organization that allows, among other things, extensive study of the removal requests.[90]

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[84] *Removing Content from Google*, *supra* note 53.

[85] Google enables filing removal requests which include activities carried out in a variety of platforms it owns, such as Blogger, Google+, Image Search, YouTube, and Web Search. See the full list at *Removing Content from Google*, *supra* note 53. *See also* Jennifer M. Urban, Brianna L. Schofield & Joe Karaganis, *Takedown in Two Worlds: An Empirical Analysis*, 64 J. COPYRIGHT SOC'Y 483, 494 (2018) (showing the top Google services represented in Lumen).

[86] *See id.* (explaining Google's content removal process). Each URL is stored under a specific domain name. *See Requests to Remove Content Due to Copyright*, GOOGLE, http://www.google.com/transparencyreport/removals/copyright [https://perma.cc/W7UB-4WH3] (last visited Sept. 14, 2017) (displaying the total number of "top-level" domains). For example, the homepage address of the Center for Law and Technology at the University of Haifa, http://weblaw.haifa.ac.il/he/Research/ResearchCenters/techlaw/ Pages/aboutus.aspx, is stored under the domain name of the Faculty Law at http://weblaw.haifa.ac.il.

[87] *Id.*

[88] *Transparency Report*, *supra* note 87. Although this data is published as part of Alphabet's attempt to increase transparency regarding its activities, this database is incomplete and very complex. It consists of three main files: (1) Domains.csv file containing information regarding the suspicious domain names, the number of the suspicious URLs that are associated with each of them, their status, and ID of the removal request; (2) Requests.csv file containing information regarding the copyright holders, the sender of the removal request, link to the requests on Lumen's website, date of receipt of the request, and ID of the request; and (3) A URL-no-action-taken.csv containing information regarding the address of the allegedly infringing URL, the domain name on which it is stored, and ID of the requests. Through union and intersection of the raw data found in these three files, we isolated the study group of this research: removal requests sent to Google concerning URLs associated with domain names identified as Israeli, i.e., with a .il extension.

[89] *See infra* Part II.B.1 (analyzing the scope of the digital enforcement activity).

[90] LUMEN, https://lumendatabase.org (last visited Sept. 16, 2017) (formerly known as "Chilling Effects"). The change of the organization's name is described in *Chilling Effects Announces New Name, International Partnerships*, LUMEN BLOG (Nov. 2, 2015),

To expand the data analysis beyond the GTR data, we created a dataset of removal requests filed with Google that targeted URLs with the .il extension,[91] extracted from the Lumen database. The dataset contains a random sample of the requests filed over a period of six months, between May and October 2013 (n=9,890).

The following Section presents a data analysis of the 9,890 removal requests transferred to Lumen.[92]

B. *Mapping the Digital Enforcement Arena*

1. *The Scope of the Digital Enforcement Activity*

The scope of copyright enforcement, targeting Israeli domains, was extracted from the GTR. Figure 1 shows the distribution of requests filed with Google for the removal of allegedly infringing materials, specifically Israeli domain webpages, from search results between July 2011 and December 2013.[93] The number of requests filed rose fairly consistently from July 2011 to April 2012, after which there was a slight decrease until August 2012, followed by a mixed trend. Starting in March 2013, there was a significant increase in the number of removal requests submitted to Google, with a moderate decline in September 2013.

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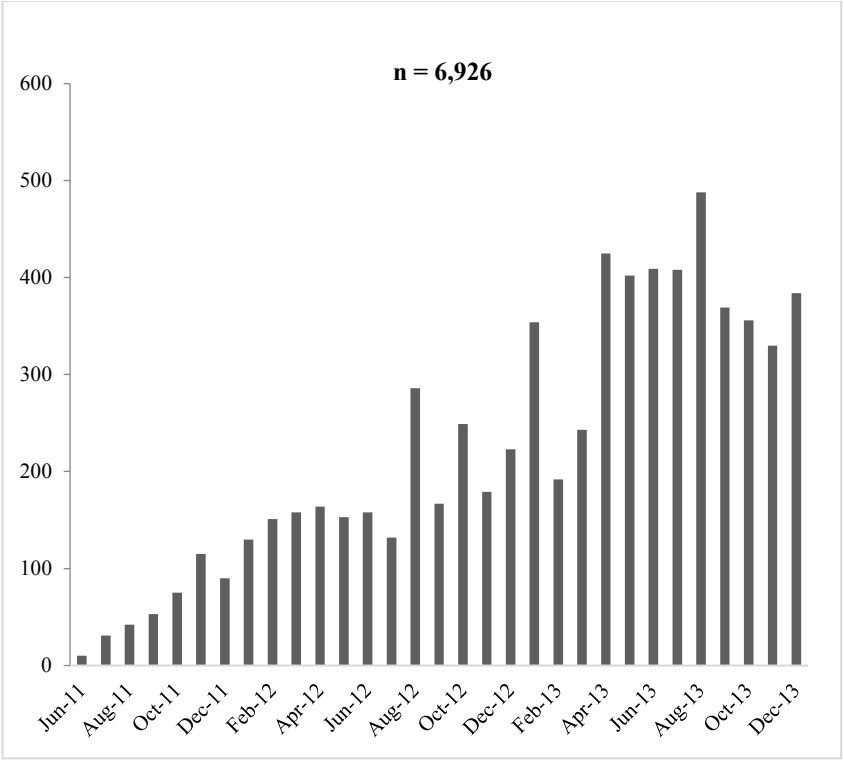
https://lumendatabase.org/blog_entries/763 [https://perma.cc/UAA3-VB4T]. The main emphasis is on the expansion of supervising the activity of content removal from the internet, not only on the basis of alleged intellectual property rights infringement and increase of the number of companies that cooperate with the organization and its international activity.

[91] Each notice can contain an unlimited number of removal requests; therefore, the analysis focused only on those referring to Israeli domains.

[92] Raw data analysis was conducted with a unique encoding engine. Urban, Karaganis & Schofield, *supra* note 3, at 80. In the course of the data collection it became clear that there are differences concerning the scope of the removal requests handled by Google relating to materials stored on Israeli domain names. These differences stem from the classification of the complaints it receives on a variety of other platforms. Together with the information published on GTR, including removal requests related to copyright infringement in the "search" category only, Google also transfers Lumen data regarding removal requests it receives on a variety of additional platforms such as Blogger, Google+, Image Search, and more. *See Removing Content from Google*, *supra* note 53 (asking reporters of content to be removed from Google to "submit a separate notice for each Google service where the content appears"). This creates significant discrepancies. For example, according to Google's data, some 7,000 removal requests have been filed against Israeli domains in the last three years. In the Lumen database, there are approximately 24,000 Israeli webpage addresses against which complaints were filed between May and October 2013 alone.

[93] The graph shows the distribution of requests filed from July 2011 to December 2013. To avoid an edge effect, we do not present data before July 2011 or after December 2013. This is the reason for the gap between the 6,926 requests shown in the graph and the 7,091 requests filed according to the GTR.

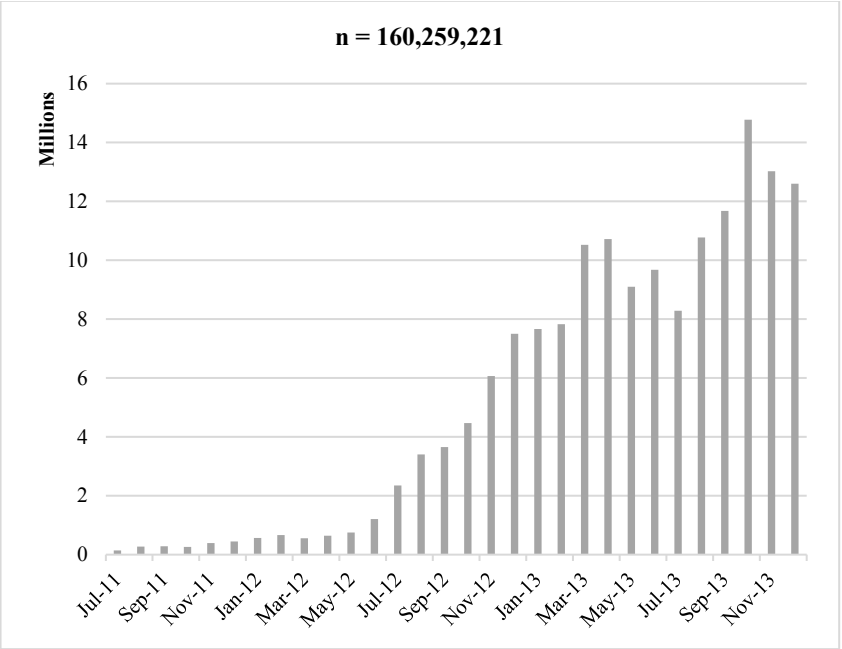
Figure 1: Distribution of Requests Filed with Google for Removal of Israeli Domain Webpages from Search Results, July 2011–December 2013



This figure is consistent with Figure 2, which shows that the upward trend in removal requests in Israel (Figure 1) is similar to the worldwide trend.[94]

[94] *Transparency Report*, *supra* note 87. Reports indicate that eighteen removal requests are submitted to Google every second. Ernesto Van der Sar, *Google Asked to Remove 18 'Pirate Links' Every Second*, TORRENTFREAK (Aug. 2, 2015), https://torrentfreak.com/google-asked-to-remove-18-pirate-links-every-second-150802 [https://perma.cc/EXE3-QWW6].

Figure 2: Distribution of Requests Filed with Google for Removal of Webpages from Search Results Worldwide, July 2011–December 2013



To appreciate the robustness of online enforcement, it is interesting to compare these figures with enforcement efforts taking place in courts. Only 99 copyright lawsuits concerning online infringement were filed in Israel during the same period of time, and overall, between 2010 and 2013 only 273 lawsuits concerning online copyright infringement were filed in Israeli courts.[95]

2. *System Abuse*

The analysis of removal requests filed with Google (Figure 3) highlights one of the most serious dangers stemming from the lack of oversight: abuse of the N&TD procedure. Our study shows that this procedure could easily be abused, and was frequently applied to remove materials that did not infringe copyright and were not suspected of copyright violation.

As shown in Figure 3, only 34 percent of removal requests concerned allegations of copyright infringement, while the remaining 66

[95] *See* Sharon Bar-Ziv & Niva Elkin-Koren, *Between Two Arenas: Online Copyright Enforcement*, 48 HEBREW U. L. REV. (Mishpatim) (forthcoming 2018) (Hebrew) (manuscript at 20) (comparing empirical findings regarding copyright enforcement in Israeli courts with copyright enforcement by online intermediaries).

percent pertained to other claims such as alleged inaccuracies, falsehoods, or violations of other rights. These non-copyright-related requests apparently sought to defend the sender's reputation against what was presumed to be defamatory, misleading, or partial information.[96] For the most part, these requests resembled claims raised under the "right to be forgotten." This right, which was upheld by the European Court of Justice (ECJ), allows EU citizens and residents to request the removal of links to certain reputation-damaging content from the search results for searches using the individual's name.[97] The ECJ held that since search engines are the "controllers" in the "processing of personal data,"[98] they must exclude results "where they appear to be inadequate, irrelevant or no longer relevant, or excessive in relation to those purposes and the light of the time that has elapsed," unless there are specific reasons justifying their existence on the internet.[99]

While the right to be forgotten was adopted by courts in the European Union, the United States has taken a different approach to search engines.[100] United States law has generally sought to encourage online intermediaries to act as neutral facilitators of content by insulating them from liability for harmful content posted by their users.[101] In fact, except for the safe-harbor provisions of the DMCA, U.S. law provides wholesale immunity to online intermediaries. Section 230 of the Communications Decency Act exempts an "interactive computer service" from any liability for injurious content published by its users.[102] This provision has been interpreted by courts quite broadly, and was upheld by courts even where service providers had knowledge of defamatory content on their service.[103] This statutory immunity

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[96] The targeted content was mainly blog posts, which referred directly to the individual, his alleged academic education, and his state of health.

[97] The "right to be forgotten" was first recognized by the European Court of Justice concerning Case C-131/12, Google Spain SL v. Agencia Española de Proteccion de Datos (AEPD), 2014 EUR-Lex 317 (May 13, 2014) [hereinafter Google Spain Case]. It has not yet been recognized by U.S. law, on the basis of which the principles underlying Google Search Engine's N&TD procedures were designed.

[98] Within the meaning of the E.U. Data Protection Directive, Article 2(d). Council Directive 95/46, art. 2(d), O.J. (L 281) 31.

[99] *See* Google Spain Case, *supra* note 101.

[100] *See generally* Leslie E. Minora, *U.S. Courts Should Not Let Europe's "Right to be Forgotten" Force the World to Forge*t, 89 TEMPLE L. REV. 609 (2017).

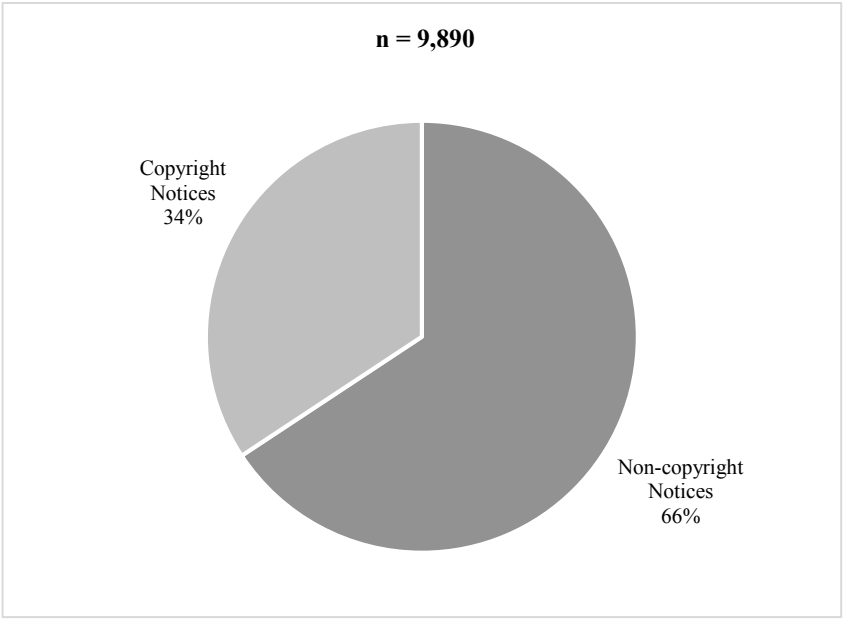
[101] *See* Nicholas W. Bramble, *Safe Harbors and the National Information* Infrastructure, 64 HASTINGS L.J. 325 (2013); Eric Goldman, *Unregulating Online Harassment*, 87 DENV. U.L. REV. 59, 60 (2010) (arguing that immunity under § 230 played a major role in the rise of social media platforms and user-generated content).

[102] 47 U.S.C. § 230(c)(2) (2012). Pursuant to § 230, no provider of an "interactive computer service shall be treated as the publisher or speaker of information provided by another information content provider." *Id.* at § 230(c)(1).

[103] Zeran v. Am. Online, 129 F.3d 327, 333 (4th Cir. 1997).

explicitly excludes any liability arising from intellectual property infringement.[104] In such cases, liability of online intermediaries for copyright-infringing materials posted by their users is governed by the DMCA. Google's N&TD mechanism, which is designed to comply with the DMCA, was clearly not intended to address complaints regarding personal data and personal reputation. In fact, Google seems to refrain from taking any measures with respect to inappropriate content complaints.[105]

Figure 3: Types of Notices, May–October 2013



Another surprising finding revealed by the data is that about 65 percent of the requests originated from a single source which filed approximately 6,500 removal requests with Google, the vast majority of which were non-copyright-related, as described above.[106]

[104] *See* 47 U.S.C. § 230(e)(2) ("Nothing in this section shall be construed to limit or expand any law pertaining to intellectual property.").

[105] According to U.S. law, an intermediary does not have the responsibility of a publisher to the content it carries, and therefore is not obliged to act to remove content, except for intellectual property infringement. *See id.* at § 230 (stating that interactive service providers or end users will not be considered publishers or speakers of questionable content coming from another content provider).

[106] *See supra* Part II.B.2.

A similar phenomenon of a significant impact by a single player was identified by Urban, Karaganis, and Schofield. That study identified an individual who sent 52.9 percent of the overall removal requests in the sample.[107] Most of the requests pointed to allegedly defamatory, harassing, slanderous, or threatening written materials.[108] These findings demonstrate the ease whereby online activities can be dominated and shaped by solo players and strategic users.[109]

Overall, these findings raise serious concerns regarding the integrity of online copyright enforcement. This robust system, which enables the removal and blocking of access to online materials without any legal oversight, is vulnerable to abuse. The findings demonstrate that some players use the system to achieve other goals, unrelated to copyright, and could in fact restrict the availability of content online without any scrutiny. This vulnerability of the N&TD procedure may carry substantive implications for freedom of speech and the rule of law.[110]

3. *The Blockbuster Filers*

A copyright owner who seeks to enforce her rights in court may face many barriers. Filing a lawsuit requires awareness and knowledge of rights and legal procedures, access to legal advice, and most importantly, resources to cover the court's and the attorney's fees.[111] Ostensibly, the digital environment was expected to make things better. The N&TD procedures intended to facilitate an immediate removal following the filing of a takedown notice by the right holder. The procedures of filing a complaint are accessible from every computer through Google's legal support page.[112] The process itself is relatively simple, fast, and inexpensive. Consequently, one would expect that the N&TD procedure would be self-administered by copyright holders and would equally serve a variety of players, including large corporations, small business, and independent creators. Surprisingly, however, individual copyright owners constitute a very small percentage of all filers of removal requests. The prominent filers with Google from May to October 2013 were large private companies (2,483 removal requests

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[107] Urban, Karaganis & Schofield, *supra* note 3, at 99.

[108] *Id.* at 99–100.

[109] *See infra* Part III.A.

[110] *See id.*

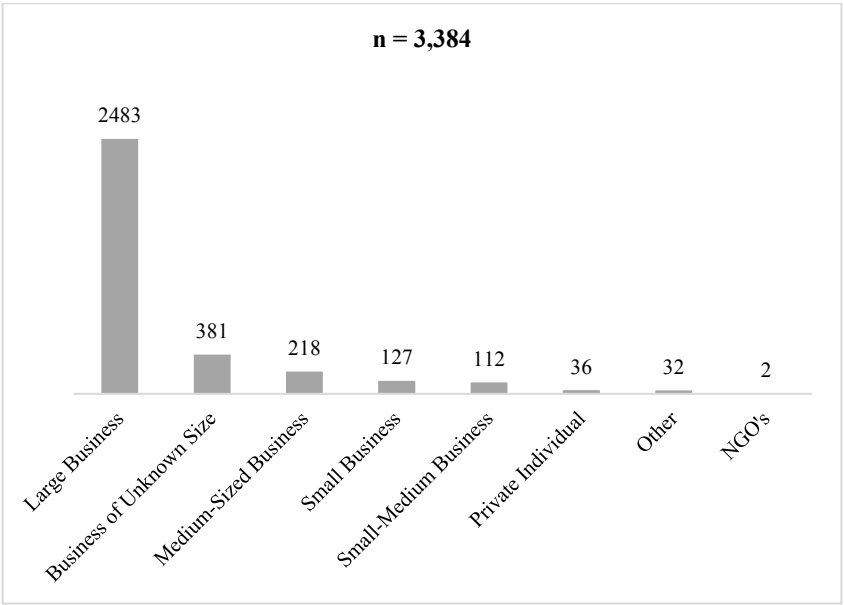
[111] ETHAN KATSH & ORNA RABINOVICH-EINY, DIGITAL JUSTICE: TECHNOLOGY AND THE INTERNET OF DISPUTES 39 (2017); William C. Vickrey et al., *Access to Justice: A Broader Perspective*, 42 LOY. L.A.L. REV. 1147, 1154 (2009).

[112] *Legal Removal Requests*, GOOGLE, https://support.google.com/legal/answer/3110420?visit_id=1-636189462694096301-2192086536&rd=1 [https://perma.cc/RJ57-9EMV] (last visited Sept. 13, 2017).

out of a total of 3,384; approximately 73 percent of all requests).[113] Only in a few cases were the N&TD procedures used by private individuals (36 removal requests out of a total of 3,384; approximately 1 percent).[114]

Moreover, the filing of notices under the N&TD regime has now turned into an industry. As demonstrated in Figure 6, nowadays, removal requests are largely managed by professional agents.

Figure 4: Prominent Filers of Requests for Removal of Search Results, May–October 2013



One possible explanation for the significantly low share of individuals in the overall filing of removal notices is a lack of motivation. Individual copyright holders might be less motivated to remove allegedly infringing materials, since they often lack any business model for commercializing their copyrighted works.[115] It might also be that some business models are based on viral distribution of content and benefit from advertising fees.[116] In such instances, individual rights

[113] *See infra* Figure 4.

[114] *See id.*

[115] LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY (2008); Steven Hetcher, *User-Generated Confusion: The Legal and Business Implications of Web 2.0*, 10 VAND. J. ENT. & TECH. L. 863, 874–75 (2008).

[116] Niva Elkin-Koren, *User-Generated Platforms*, *in* WORKING WITHIN THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY 111, 115 (Rochelle C. Dreyfuss et al., eds., 2010).

holders simply lack the motivation to enforce their rights, and may refrain from taking action against unauthorized copying.

Another possible explanation for the dominance of corporate players may concern new barriers to justice, underscored by the digital environment. These may include a lack of sufficient awareness of the digital proceedings and knowledge gaps between individuals and corporate players pertaining to the scope of rights, the available procedures for enforcing rights, and the use of these procedures. Indeed, individuals may often learn about the N&TD procedures online, yet the type of information available online varies from one platform to another; also, detection of infringement activity and filing a removal request require knowledge and skills. Moreover, the need to handle the sheer volume of potentially infringing materials and to address piracy on a global scale has generated expertise, and apparently has created some advantages for repeat players.[117]

Analysis of the prominent players that filed removal requests with Google during the study period (Figure 5) indicates that most removal requests were filed for software copyright enforcement, as the largest repeat filer, Microsoft (with 1,806 requests, 53 percent of all copyright requests), was followed by Adobe[118] and TheEsa,[119] albeit at much lower rates (16 percent and 9 percent, respectively).

[117] *See* Urban, Karaganis & Schofield, *supra* note 3, at 52–53 (indicating that the number of OSPs that implement automatic methods to remove allegedly infringing materials represents a minority of the respondent OSPs—only nine of twenty-nine employed any of the enforcement measures—but these nine are "some of the dominant Internet services in their respective areas").

[118] ADOBE, http://www.adobe.com/il_en/ [https://perma.cc/E27M-69VB] (last visited Sept. 14, 2017).

[119] ENTERTAINMENT SOFTWARE ASSOCIATION, http://www.theesa.com/ [https://perma.cc/PF9D-3WT3] (last visited Sept. 14, 2017).

Figure 5: Prominent Players Who Filed Requests for the Removal of Search Results, May–October 2013

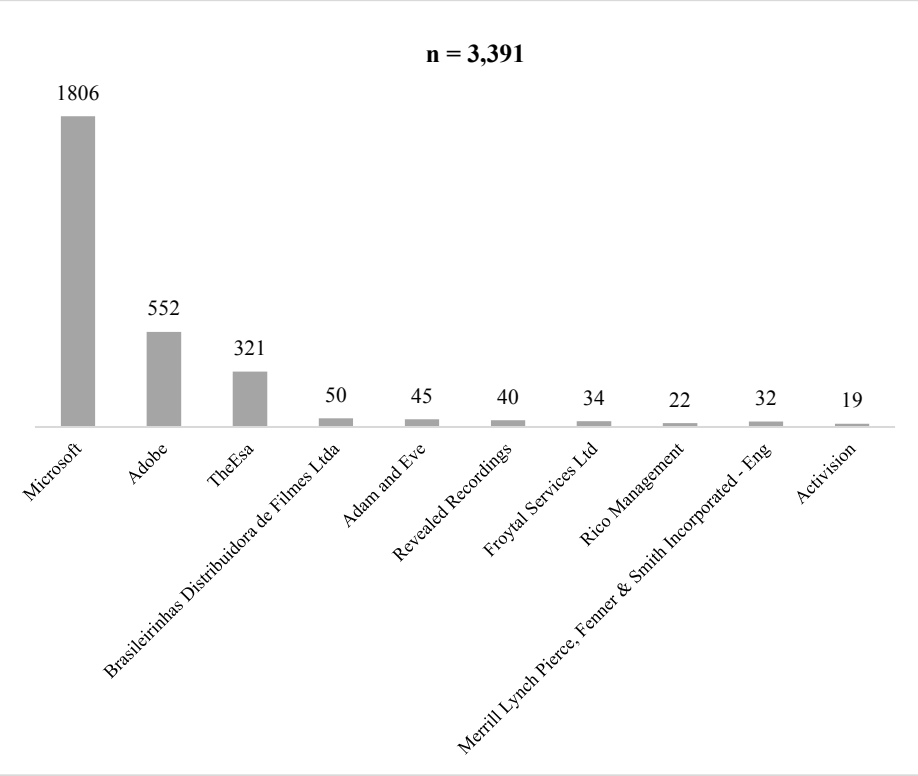


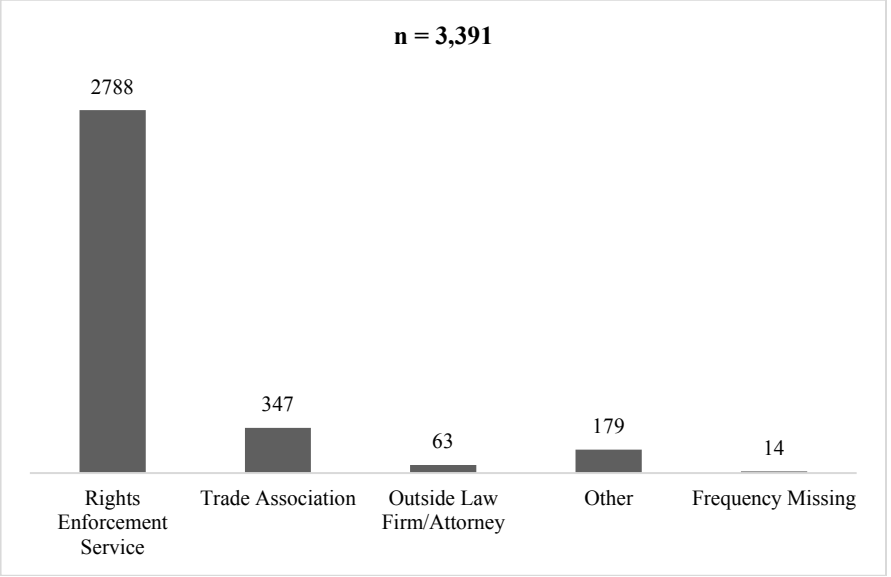
Figure 6 shows that most of the requests were filed through rights-enforcement service agents, mainly those specializing in copyright-enforcement services (about 82 percent). These agents are repeat players, filing multiple removal requests, and most likely have significant expertise in these procedures.[120] The rise of enforcement agents coincides with the dramatic rise in the scope of removal requests filed by copyright holders, and the shift to automatic enforcement procedures (robo notices).[121] In fact, the shift to management of removal requests through agents reflects a significant change in the N&TD regime. It shows that online enforcement has become a professional

[120] Under § 512 of the DMCA, removal requests must be filed by the copyright owner or any person authorized to act on their behalf. 17 U.S.C. § 512(c)(3) (2012). *See also* Jennifer M. Urban, Brianna L. Schofield & Joe Karaganis, *supra* note 63 (demonstrating also high rate of repeat players in Google Images notices, but twith different profile from the professionalized Google Sear filers).

[121] Similar findings were reported by Urban, Karaganis & Schofield. *See* Urban, Karaganis & Schofield, *supra* note 3, at 84 (reporting that around 92 percent of the removal requests were filed by agents, approximately 49 percent of them being copyright-enforcement organizations).

specialty which involves some expertise. It may further indicate the power disparities between copyright enforcers, who are systematically engaged in targeting allegedly infringing materials at a global scale, and the targeted users.

Figure 6: Sender and Principal Characteristics: Agent Type, May–October 2013



4. *Who Are the Alleged Infringers?*

The study identified the targets of copyright removal requests which, in most cases, were online forums dominated by a handful of websites. Most of the alleged infringing activity targeted by rights holders in this study was apparently conducted on only two main sites, as presented in Figure 7.

This finding is intriguing. If rights holders sought to achieve efficient enforcement, why bother implementing a robust system for detecting infringing materials, locating infringing URLs, and filing notices with online intermediaries, rather than undertaking more specific enforcement proceedings against these hosting sites only? In other words, the findings show that in many cases, copyright holders who sought to enforce their rights could have approached the infringing sites directly, without the need to file a removal request with Google.

There are several possible explanations for these findings. One is the gatekeeping function of online intermediaries. Search engines—in this case, Google—provide gateways to online content. Google locates

relevant information sought by the search request. Consequently, it is assumed that once infringing copies are no longer indexed by Google, users, or at least most users, will not find the infringing copies hosted on those URLs. It transpired, however, that allegedly infringing activity took place at several dominant websites, and users seeking infringing materials probably knew how to approach them directly without going through any search engine first. This could render the entire strategy futile.

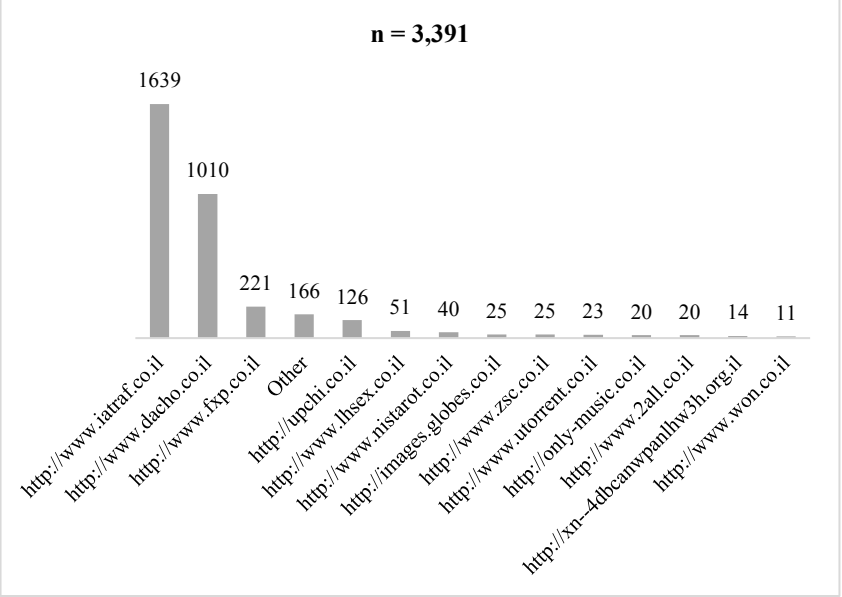
Another possible explanation is path dependency of professional enforcement agents. As noted above, most online enforcement activity is managed by professional enforcement agents who operate at a global scale. Their practices involve automated detection of infringing activity by crawlers, which generate a list of URLs which is then embedded in a standard notice filed with Google. A typical notice may include dozens or even hundreds of URLs located in various domains across the globe. Such large scale automated procedures are less likely to be attentive to local infringing hubs ("red-flag" sites).

Finally, if professional agencies are paid to file notices, and their performance is measured by detection and filing, they may have the incentive to repeat the same without directly addressing the enforcement challenge by blocking the red-flag sites. This raises an interesting question regarding the safe-harbor eligibility of an online intermediary that receives repeat notices against red-flag sites. Copyright holders have argued that the safe harbor does not apply to an OSP who had red flag awareness of infringing acts.[122] Another threshold to safe harbor is implementing "a policy that provides for the termination in appropriate circumstance of subscribers and accounts holders . . . who are repeat infringers."[123] Yet, when copyright holders fail to take measures against red-flag sites and repeat infringers, it seems unreasonable to require an OSP to do the same.

[122] The interpretation of "red-flag" knowledge under § 512(c)(1)(A) has been addressed by the courts in several cases. *See, e.g.*, Viacom Int'l, Inc. v. YouTube Inc., 676 F.3d 19, 30–31 (2d Cir. 2012) (holding that "red-flag" knowledge refers to an objective standard); UMG Recordings Inc. v. Shelter Cap. Partners LLC, 718 F.3d 1006, 1025–26 (9th Cir. 2013) (holding that copyright holders who are seeking to establish knowledge must use the statutory notification procedure).

[123] 17 U.S.C. § 512(i).

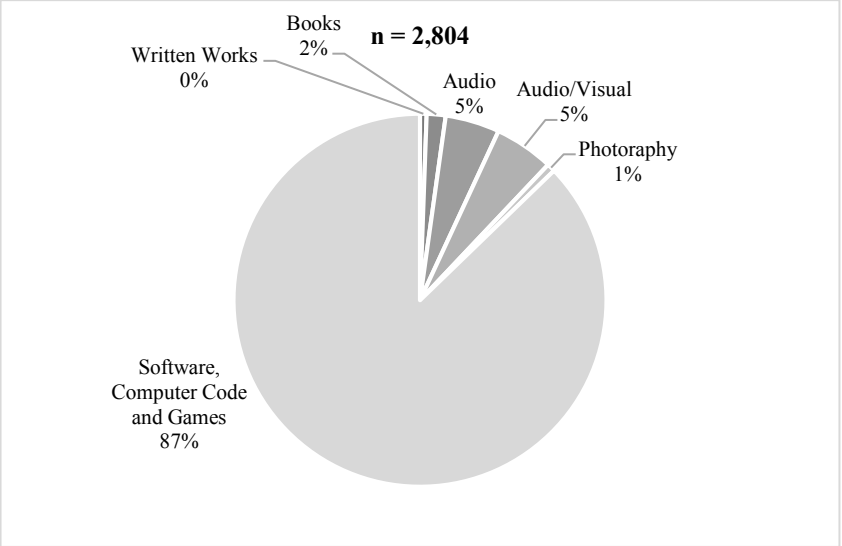
Figure 7: Identity of Targets, May–October 2013



5. *Copyright Subject Matter*

The study found that the vast majority of copyright removal notices filed with Google regarding .il websites addressed software infringement (87 percent). The rest were divided among books, audio, audio-visual/video works, and photographs.

Figure 8: Allegedly Infringing Subject Matter, May–October 2013



That is not to say that all copyright disputes pertaining to online infringement concern software. Comparing our findings in this study with the lawsuits pertaining to online infringement filed in courts during the same period reveals a division of labor between online enforcement via intermediaries and the enforcement in courts. While software was almost absent from lawsuits filed in court (only 1 percent), other types of copyrighted subject matter were more likely to be litigated in court. The study, which was conducted in Israel, found that 57 percent of the lawsuits involving online copyright infringement concerned photographs, 25 percent text,[124] 7 percent video content, and 3 percent music.[125]

6. *The Effectiveness of N&TD*

The findings on the effectiveness of online copyright enforcement are surprising. Figure 9 shows that in 85 percent of cases, the link to the allegedly infringing materials is still live after a removal request, albeit not in Google search. In other words, while the link most likely does not appear in Google search results following the removal requests, the content can still be accessed through a direct link. In attempts to access the allegedly infringing materials, an error message appears in only 8

[124] Articles and reports that appeared on commercial sites, marketing texts, and more.
[125] *See* Sharon Bar-Ziv & Niva Elkin-Koren, *supra* note 99 at 28.

percent of cases, and in another 5 percent the content is not available online.[126]

It can be argued that these findings are not indicative of limited effectiveness. As long as the link to the allegedly infringing materials does not appear in Google search, for all intents and purposes it is nonexistent—as the saying goes, "If you aren't there, you don't exist." However, because most allegedly infringing materials are distributed through two leading sites that constitute approximately 79 percent of all removal requests,[127] it is simply unnecessary to access these sites via Google search. Users who seek infringing materials might be familiar with these sites, which presumably obviates the need for search engine mediation. Moreover, as most cases of allegedly infringing materials content refer to software, as seen in Figure 8, it is safe to assume that potential consumers of this content are well aware of access options other than Google's search engine

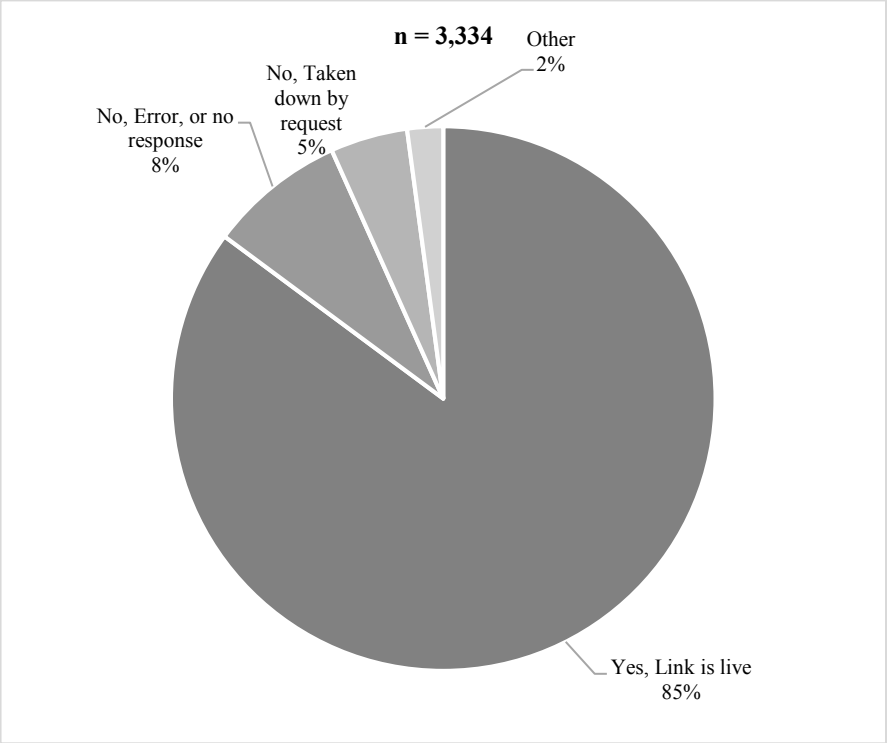
At the same time, however, removal of links from Google search results may assist in reducing the exposure of infringing websites to new audiences, thereby slowing down the growth of infringing communities.[128]

[126] *See infra* Figure 9. An interesting experiment shows that only 50 percent of video-sharing sites and 12.5 percent of photo-sharing sites remove allegedly infringing content following a removal request. Maayan Perel & Niva Elkin-Koren, *Black Box Tinkering: Beyond Disclosure in Algorithmic Enforcement*, 69 FLA. L. REV. 181, 208 (2017).

[127] *See supra* Figure 7.

[128] *See Section 512 of Title 17: Hearing Before the Subcomm. on Courts, Intellectual Prop. & the Internet of the H. Comm. on the Judiciary*, 113th Cong. 11 (2014) (statement of Sean M. O'Connor, Professor of Law, University of Washington (Seattle)) (addressing one N&TD enforcement problem he called "the relentless reposting of blatantly infringing material").

Figure 9: Is the Link Live? May–October 2013



7. *Counter Notices*

As explained earlier, the counter notice is extremely important to protect the right of the alleged infringer not to have his content removed without legal justification. This procedure is also intended to protect the public interest in preventing groundless or arbitrary restrictions on the availability of noninfringing materials and to secure freedom of expression.

In practice, however, the effectiveness of the counter notice mechanism is limited. To qualify for safe harbor, intermediaries are required to remove content immediately upon receiving a notice, without waiting for counter notices.[129]

What's more, users whose content was targeted by a removal request often lack knowledge or experience in dealing with copyright issues, and therefore may not fully grasp the significance of a counter notice procedure. They might also be deterred by the risk associated with

[129] 17 U.S.C. § 512(c)(1)(A)(iii).

exposure to litigation.[130] Intermediaries have also reported their concern about restoring online access to allegedly infringing materials following a counter notice although the law explicitly exempts them from liability in cases where the material is indeed infringing.[131]

This study found that not a single counter notice was filed in response to the removal requests evaluated.[132] This is not surprising, since the DMCA does not require search engines to notify alleged infringers that the link to the material has been removed.[133] Consequently, Google has no duty to notify the provider of content that a link to her materials has been removed.

In the absence of such notification, the alleged infringer may remain unaware that the content does not appear in Google search results. Content providers are unlikely to check routinely that all of the content they have posted online appears in search results. By the time the alleged infringer learns that her content is no longer availbale on the search results, the removal of the link may have already caused lasting damage unbeknownst to the content provider (for example, in the case of competing commercial businesses or removal in the course of election campaign).[134] Furthermore, in the absence of notification as to why the link was removed, alleged infringers or rights holders do not know the reasons for the removal and cannot defend themselves. Recognizing that a specific link has been removed and understanding that the cause for removal was copyright related are both essential preconditions for targeted users, as well as third parties, to contest the removal of their links.

Thus, while the counter notice procedure is available, in practice, counter notices are rarely filed, and intermediaries tend to view them as irrelevant.

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[130] *See Removing Content from Google*, GOOGLE, https://support.google.com/legal/troubleshooter/1114905?rd=2#ts=1115655%2C1614942 [https://perma.cc/8R3Q-V2PM] (last visited Feb. 27, 2018). The form includes a warning regarding the legal consequences from abusing the process of counter notice.

[131] Urban, Karaganis & Schofield, *supra* note 3, at 44–45.

[132] This finding is consistent with a similar study conducted in the United States. *See id.* at 95 (reviewing results of a study on DMCA notices that found that "counter notices are rarely used").

[133] While hosting services (e.g., a website, a social media platform) are required to take "reasonable steps promptly to notify the subscriber that it has removed or disabled access to the material," 17 U.S.C. § 512(g)(2)(A), the DMCA does not apply a similar notification requirement to search engines. *See id.* at § 512(d) (listing the requirements for search engines to avoid liability for infringement by users).

[134] *See* John Tehranian, *The New Censorship*, 101 IOWA L. REV. 245 (2015); *see also* Sag, *supra* note 9 at 506.

8. *Questionable Removals*

The large-scale use of the N&TD regime often raises concerns over accuracy of removals.[135] As noted previously, 66 percent of all removal requests were non-copyright-related.[136]

However, out of the remaining 34 percent of removal requests concerning copyright infringement, a high percentage of targeted materials were likely infringing. In 88 percent of the removal requests, the allegedly infringing material was indeed likely to infringe copyright, with more than 50 percent of the original content having been copied by the allegedly infringing material.[137] Since the vast majority of removal requests explored in this study targeted infringing copies of software,[138] the original content was presumably copied in full, thus demonstrating complete overlap between the original content and the allegedly infringing materials. This may also explain the significant paucity of counter notices, as providers of pirated copies lack any legal ground for contesting the removal. Arguably, these findings reflect a situation where requests for content removal from Google search results are filed only in cases where the rights holders are quite certain that their rights have been infringed. A more likely explanation, however, is that this high level of presumably legitimate removal requests derives from the fact that the vast majority of removal requests were targeting illegal copies of software.[139]

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[135] *See id.* at 116 (explaining the significant decrease in substantive accuracy of takedown requests that arises when rights holders use automated large-scale takedown notice tools). This problem is compounded when one considers the absence of counter notices. *See supra* note 138 and accompanying text.

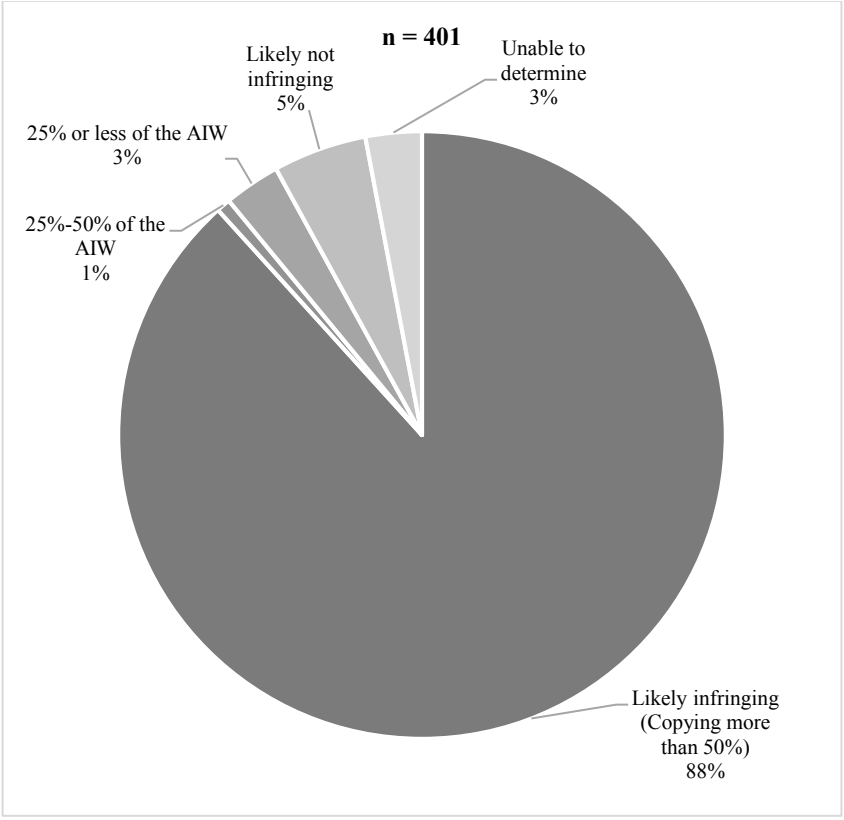
[136] *See supra* Figure 3.

[137] *See infra* Figure 10.

[138] *See supra* Figure 8.

[139] There is evidence of removal requests originating accidentally. *See, e.g.*, Andy Maxwell, *Harry Potter Publisher Goes on a Bizarre Anti-Piracy Rampage*, TORRENTFREAK (Apr. 14, 2016), https://torrentfreak.com/harry-potter-publisher-goes-on-a-bizarre-anti-piracy-rampage-160414 [https://perma.cc/D7XB-YGPC] (describing instances in which removal requests attributed copyright infringement to the content creators themselves). There is also evidence of requests submitted to remove nonexistent or unavailable content. *See, e.g.*, Ernesto Van der Sar, *After 4 Years . . . Copyright Holders Still Think Megaupload Is Alive*, TORRENTFREAK (Apr. 17, 2016), https://torrentfreak.com/after-4-years-copyright-holders-still-think-megaupload-is-alive-160417 [https://perma.cc/DH5Y-6NHF] (describing instances in which removal requests targeted content that had not been available online for many years).

Figure 10: How Much of the Allegedly Infringing Work (AIW) Do the Allegedly Infringing Materials Appear to Copy? May–October 2013



As shown in Figure 10, in 4 percent of cases, the allegedly infringing materials appeared to copy less than 50 percent of the original content. In an additional 5 percent of cases, the allegedly infringing materials likely did not infringe on any copyright. Overall, the findings show that less than 10 percent of copyright removal requests were questionable. By comparison, the study of Urban, Karaganis, and Schofield indicates that a significant percentage (36.3 percent) of removal requests were questionable.[140]

In the absence of legal oversight of removed content, questionable requests pertaining to potentially legitimate content add to the concerns

[140] Urban, Karaganis & Schofield, *supra* note 3, at 106.

created by overbroad copyright claims.[141] This becomes an alarming concern, as there is increased evidence for abusive use of the N&TD regime alongside evidence of mistargeting of content authorized by the rights holders, or rights holders directly targeting their own works.[142] This too might have far-reaching implications for free speech when the removal requests are motivated by political interests, especially during election campaign seasons.[143]

III. LESSONS DRAWN FROM N&TD PRACTICES AND IMPLICATIONS FOR POLICY

The study described in this Article provides a rich picture of the actual use of the N&TD procedures for online copyright enforcement. The findings shed light on the great transformation in law-enforcement strategies in the digital era, shifting toward automated enforcement procedures, which are implemented by online intermediaries.

As discussed in the following sections, these changes may have significant implications for access to knowledge and freedom of speech, for achieving the goals of copyright law, and for access to justice and due process. By studying the invisible dynamics at work, the findings of this study demonstrate the unintended consequences of implementing enforcement procedures by online intermediaries, which are simply asked to comply with the N&TD regime. These findings may thus offer new insights to policymakers in designing regulation for other areas of law enforcement.

A. *Implications for Access to Knowledge and Freedom of Speech*

The study discussed in this Article demonstrated the robustness of online copyright enforcement.[144] Requests to remove allegedly infringing materials from search results are becoming increasingly popular compared to the much lower rate of copyright infringement lawsuits.[145]

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[141] Rebecca Tushnet, *Fair Use's Unfinished Business*, 15 CHI.-KENT J. INTELL. PROP. 399, 399–400 (2016).

[142] *See id.* at 401 ("Overbroad matching algorithms lead copyright owners to send takedown notices targeting mere reporting on their works, and even to demand takedowns of links to their own websites.").

[143] *See id.* at 402 (explaining that during election campaign seasons, "takedown requests can suppress the most effective . . . means of communicating political messages" due to the DMCA's minimum ten-business-day delay before counter notices become effective). *See supra* Part III.A.

[144] *See supra* Figure 1.

[145] *See supra* Part II.B.1 (highlighting the discrepancy between online enforcement activity and lawsuits relating to online copyright infringement).

In recent years, many scholars have raised the concern that the N&TD procedures will be misused to dampen free expression.[146] Our study provides strong empirical evidence to support this concern. The vast majority (66 percent) of removal requests analyzed in this study targeted noninfringing materials.[147] Even among the copyright-related removal requests, in some cases, the targeted content was not necessarily infringing.[148] Urban, Karaganis, and Schofield found a 36.3 percent rate of questionable removal requests.[149] Another study, analyzing over 50 million removal requests, indicated that even the most forgiving measures showed that 8.3 percent had serious technical errors and 1.3 percent had substantive errors.[150]

There are many anecdotal incidents where notices have been filed to remove legitimate content, such as fair use. For instance, a twenty-nine-second home video of the dancing baby of the Lenz family, where two toddlers are seen dancing in the family's kitchen to the song "Let's Go Crazy" by Prince, was removed from YouTube following a takedown notice issued by Universal Music. This video was later held by the Ninth Circuit to be fair use.[151] Copyright notices were also filed by Samsung to block parodies pertaining to the Samsung Note 7 phone,[152] and by Sony Music against the use of short musical samples

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[146] *See, e.g.*, M. Margaret McKeown, Keynote Address, *Censorship in the Guise of Authorship: Harmonizing Copyright and the First Amendment*, 15 CHI.-KENT J. INTELL. PROP. 1, 2, 5 (2016) (discussing theories of tension between intellectual property rights and freedom of speech, and articulating her own); Sag, *Internet Safe Harbors*, *supra* note 9, at 15–16 (describing free-speech ramifications of the DMCA's incentives).

[147] *See supra* Figure 3.

[148] As discussed above, the present study's findings indicate that most of the materials targeted by copyright removal notices were indeed infringing. At the same time, these removal requests amount to about one third of the overall requests studied. *See supra* Part II.C.3. One should bear in mind that most of the cases in this study involve software infringement. *See supra* Part II.C.5; *supra* Figure 8. Hence, in online infringements involving software, it is simpler to identify copyright infringement and copying may provoke less controversy than in cases involving content such as music or photography.

[149] Urban, Karaganis & Schofield, *supra* note 3, at 106.

[150] Daniel Seng, "*Who Watches the Watchmen?*"*: An Empirical Analysis of Errors in DMCA Takedown Notices*, 7, 32, 45–46 (Jan. 23, 2015), https://ssrn.com/abstract=2563202 [https://perma.cc/788K-E82Y]; Tushnet, s*upra* note 148, at 400.

[151] Lenz v. Universal Music Corp., 801 F.3d 1126, 1129–30 (9th Cir. 2015), *amended and superseded on denial of reh'g*, 815 F.3d 1145 (9th Cir. 2016).

[152] James Titcomb, *Samsung Attempts to Take Down Parody Note 7 Bomb GTA Videos*, THE TELEGRAPH (Oct. 21, 2016, 8:21 AM), http://www.telegraph.co.uk/technology/2016/10/21/samsung-attempts-to-take-down-parody-gta-videos-with-note-7-bomb [https://perma.cc/2YGF-NCH3]. In this case, gamers made modifications to the video game Grand Theft Auto V, depicting the game's sticky bomb weapons replaced with exploding Samsung Galaxy Note 7 devices.

during a lecture which was uploaded to YouTube.[153] This is notwithstanding that all of these uses are presumably fair.

Overall, the N&TD regime has become a fertile ground for illegitimate censorship and removal of potentially legitimate materials. The strong incentives of online intermediaries to remove materials upon receiving a notice, without exercising any discretion regarding the claim, enable an easy channel of misuse.

The study demonstrates the vulnerability of the N&TD procedure to strategic use that seeks to remove sensitive information or particular types of content. The fact that requests to remove noninfringing materials were submitted by a single entity[154] underscores the ability of a strategic player (such as a state actor or large corporation and even a single individual), to exert a wide-ranging impact by, in effect, taking advantage of the enforcement system created by the statute. Such strategic use of the system may allow the removal of any undesired content, unflattering postings, competing materials of competitors, or politically controversial materials.[155] Since the N&TD procedures are implemented in a nontransparent way,[156] it is difficult to track such misuse. Moreover, since the N&TD procedures involve an immediate remedy (removal) but lack any legal oversight, there are no effective means to protect against abuse of the process. We currently lack sufficient measures for detecting and preventing this type of misuse.[157] As long as the automatic enforcement system does not distinguish legitimate removal requests from noncopyright requests, there is a great potential for misuse.

The massive removal of noninfringing materials, as demonstrated by this study, may carry serious implications for access to knowledge and freedom of speech. The ability to remove materials by simply issuing a notice creates a powerful mechanism for removing online content. The online environment serves as a major source of news, knowledge, and data. It is a vital source of information for consumers

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[153] Mike Masnick, *Sony Music Issues Takedown on Copyright Lecture About Music Copyrights by Harvard Law Professor*, TECHDIRT (Feb. 16, 2016, 9:21 AM), https://www.techdirt.com/articles/20160214/08293233599/sony-music-issues-takedown-copyright-lecture-about-music-copyrights-harvard-law-professor.shtml [https://perma.cc/A9A2-XUSL].

[154] *See supra* Part II.B.2 ("[A]bout 65% of the requests originated from a single source, which filed approximately 6500 removal requests with Google, the vast majority of which were non-copyright-related, as described above.").

[155] *See* Tushnet, s*upra* note 148, at 402 (presenting examples of takedown requests motivated by improper commercial or political interests, such as "to suppress discussion of [a business's] products or those of their competitors" or to target government critics in Argentina and Ecuador).

[156] *See* Perel & Elkin-Koren, *supra* note 15, at 505–06, 513 (describing the lack of transparency in the practices of intermediaries and the procedures of enforcement algorithms).

[157] *Id.*

who make commercial choices and market transactions, and for citizens who wish to participate in democratic deliberation.

The N&TD regime shapes the availability of content online, by enabling an unwarranted removal. Moreover, the lack of legal or public oversight of content removal activity may seriously endanger freedom of expression and free competition.[158]

B. *Implications for Copyright Goals*

The purpose of the copyright law is to "enrich[ ] the general public through access to creative works."[159] As the Supreme Court in *Sony* explained, the law aims at striking a balance "between the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand."[160]

The N&TD regime intended to serve these copyright goals. On the one hand, it sought to strengthen copyright enforcement by enabling copyright holders to obtain a swift removal of infringing materials.[161] Digital enforcement by online intermediaries was presumably an attractive solution to the challenges of enforcing copyright in digital networks. The ease of copying and distributing copyrighted materials by every end user of the network made it extremely difficult to identify, litigate, and obtain damages for copyright infringement. Enforcement by online intermediaries addresses this difficulty by providing an incentive to collaborate with rights holders in detecting and removing allegedly infringing materials without resorting to the courts.[162] At the same time, the N&TD regime sought to enable access to creative works by limiting the liability of online intermediaries. The goal was to encourage the development of interactive services that would facilitate creation and dissemination of creative works by users.[163]

The present study shows that these goals were only partially achieved. For copyright holders, the DMCA was meant to secure an

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[158] *See also* Azurmendi, *supra* note 2, at 43; . Sag, *Internet Safe Harbors*, *supra* note 9, at 61–63 (discussing potential threats to free speech created by automated takedown policing). For more examples of online content removal not based on alleged copyright infringement, see Perel & Elkin-Koren, *supra* note 15, at 488–490, 500.

[159] *See* Kirtsaeng v John Wiley & Sons, Inc., 136 S. Ct. 1979, 1986 (2016) (quoting Fogerty v. Fantasy, Inc., 510 U.S. 517, 527 (1994)).

[160] Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984); *see also* William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 332–33 (1989) (discussing the competing interests of creators in sharing and protecting their work).

[161] *See supra* notes 151–155.

[162] Bridy, *supra* note 65, at 185, 185 n.7.

[163] *Id.*

efficient remedy against piracy. Indeed, the N&TD regime offered copyright holders an accessible mechanism for a swift removal of infringing content. Yet, the effectiveness of such removal was only partial. The findings raise doubts regarding the effectiveness of the N&TD enforcement procedures. They show that in most cases the allegedly infringing materials are still available online and can be accessed directly, even after a notice and removal of the link by Google.[164] One could argue that in many cases such failure to remove the infringing source is not necessarily ineffective. The reason is that the removal of links in Google search results may reduce overall traffic to the infringing websites. However, it is reasonable to assume that interested users can reach the relevant websites without any need for Google or other search engine mediation.[165]

From the perspective of access, the N&TD regime is not sufficiently equipped to secure adequate access to copyrighted materials.

Copyright law intends to promote progress, not only by securing incentives to authors but also by ensuring the freedom of current and future authors to use existing works and build upon them.[166] As recently explained by the Supreme Court in *Kirtsaeng v. Wiley*,[167] copyright law is "striking a balance between encouraging and rewarding authors' creations and enabling others to build on that work."[168] To ensure sufficient access, copyright protection is limited by fundamental balancing rules, and by limitations and exceptions. Fair use serves as a check on copyright to make sure it does not stifle the very creativity that the law seeks to foster.[169] It is also considered one of the safety valves which allows copyright protection to coexist with freedom of expression.[170] Therefore, to protect freedom of speech within copyright

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[164] *See supra* notes 169–170 and accompanying text.

[165] *See Section 512 of Title 17: Hearing Before the Subcomm. on Courts, Intellectual Prop. & the Internet of the H. Comm. on the Judiciary*, 113th Cong. 11 (2014) (statement of Sean M. O'Connor, Professor of Law, University of Washington (Seattle)) (addressing one N&TD enforcement problem he called "the relentless reposting of blatantly infringing material").

[166] *See* Authors Guild, Inc. v. HathiTrust, 755 F.3d 87, 94–95 (2d Cir. 2014) ("[Copyright] is designed rather to stimulate activity and progress in the arts for the intellectual enrichment of the public." (quoting Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1107 (1990))).

[167] 136 S. Ct. 1979 (2016).

[168] *Id.* at 1986 (quoting Fogerty v. Fantasy, Inc., 510 U.S. 517, 527 (1994)).

[169] *See* Stewart v. Abend, 495 U.S. 207, 236 (1990) ("[Fair use] permits courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster." (quoting Iowa State Univ. Research Found., Inc. v. Am. Broad. Cos., 621 F.2d 57, 60 (2d Cir. 1980))).

[170] *See generally, e.g.*, NEIL WEINSTOCK NETANEL, COPYRIGHT'S PARADOX (2008); Michael D. Birnhack, *Copyright Law and Free Speech After* Eldred v. Ashcroft, 76 S. CAL. L. REV. 1275 (2003); Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 YALE L.J. 535, 565–66 (2004).

law, the fair use doctrine authorizes the court to permit certain unlicensed uses in order to secure freedom of speech, notwithstanding the limits on expression created by copyright.[171]

The findings show that N&TD was used to remove noninfringing materials, some of which were presumably fair use.[172] This adds to the mounting anecdotal data of removal requests which were targeting fair use.[173]

The study underscores, however, a more profound shortcoming of the N&TD regime. The alarming findings on large-scale use of N&TD to remove noncopyrighted materials shows the potential risk of enabling a removal without any sufficient oversight. Since achieving the goals of copyright law depends on securing a balance between securing incentives to authors and ensuring access to copyrighted works, a regime that is incapable of ensuring adequate access may hinder the objectives of copyright law.

The N&TD procedure is dominated by rights holders who issue notices and online intermediaries that administer these notices and execute removals.[174] This results in a robust removal system, which reflects both rights holders' judgment about which content to target by takedown notices and the choice of online intermediaries how to respond, i.e, which content to remove. However, the interests of rights holders and intermediaries may not always coincide with the goals of copyright law.[175] Rights holders may seek to remove any unpaid use of their content, even where such use might be socially beneficial. Online intermediaries may have strong incentives to avoid any litigation over copyright claims of users and may also share business interests with copyright owners which are using their platforms for commercial distribution.

Assigning to intermediaries the power to enforce and to reach a substantive judgment constitutes a typical case of "privatiz[ing] justice."[176] This system lacks any in-depth examination of the scope of copyright protection, the scope and nature of the allegedly infringing activity, and the legitimacy of using the copyrighted materials in any given circumstance. Enforcing copyright claims, without considering

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[171] *See* Golan v. Holder, 132 S. Ct. 873, 890 (2012) (referring to fair use and idea/expression dichotomy as the "'traditional contours'" of copyright law and "built-in First Amendment accommodations" (quoting Eldred v. Ashcroft, 537 U.S. 186, 221 (2003))).

[172] *See supra* Part II.B.7.

[173] *See supra* Part III.A

[174] *See* Bridy, *supra* note 65, at 187 (explaining the primary role of intermediaries and copyright owners in the area of N&TD).

[175] Elizabeth G. Thornburg, *Going Private: Technology, Due Process, and Internet Dispute Resolution*, 34 U.C. DAVIS L. REV. 151, 154 (2000).

[176] *Id.* at 154, 202–03.

any copyright principles in implementing enforcement, may lead to the removal of noninfringing materials that should otherwise remain available online. This may hamper the ability of copyright law to achieve its goals through a delicate balance between incentives for authors and access to copyrighted works.[177]

Moreover, some intermediaries have surpassed the N&TD procedure necessary to obtain a safe harbor, and are now voluntarily offering additional enforcement measures to rights holders.[178] This creates new business opportunities for copyright owners by facilitating transactions with unauthorized users, but it may also threaten the interests of users in obtaining legitimate access to creative works and exercising free speech.[179]

C. *Implications for Access to Justice and Due Process*

The principle of access to justice is designed to ensure that the dispute-resolution procedures will be accessible to all, especially disadvantaged parties.[180] Courts, where copyright was traditionally enforced, are often criticized for creating barriers to access to justice.[181] These barriers are primarily due to high litigation costs. Litigation in court may also reinforce wide gaps in knowledge and access to legal counseling in ways that can deter the public from taking advantage of judicial procedures established to protect their rights.[182]

One might have expected that the ease of filing a removal request through N&TD procedures would enable rights holders, unaccustomed to legal procedures, to receive fast, convenient, inexpensive, and effective enforcement of their rights. Likewise, one would expect users whose content was targeted by a notice to file a counter notice, which presumably involves no cost and no legal expertise. However, a surprising finding emerged from this study: N&TD serves mainly large players; more specifically, multinational companies.[183] These

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[177] *See* Owen M. Fiss, *Against Settlement*, 93 YALE L.J. 1073, 1075 (1984) (contending that the negative effects of privatizing justice via settlements greatly outweigh the benefits of judicial efficiency); David Luban, *Settlements and the Erosion of the Public Realm*, 83 GEO. L.J. 2619, 2661–62 (1995) (arguing that an overemphasis on settlements can delegitimize judicial decisions).

[178] Niva Elkin-Koren, *Fair Use by Design*, 64 UCLA L. REV. 1082 (2017); Bridy, *supra* note 65, at 185, 189, 190. For an example of an intermediary voluntarily providing additional enforcement measures, see *How Content ID Works*, YOUTUBE, https://support.google.com/youtube/answer/2797370?hl=en [https://perma.cc/RQS7-PUBM] (last visited Sept. 28, 2017).

[179] Elkin-Koren, *supra* note 120, at 7.

[180] Vickrey et al., *supra* note 115, at 1147.

[181] *See, e.g.*, *id.* at 1180 (criticizing judiciary-supported budget cuts since those "lead[] to increased economic barriers for low-income litigants").

[182] Orna Rabinovich-Einy, *Balancing the Scales: The Ford-Firestone Case, the Internet, and the Future Dispute Resolution Landscape*, 6 YALE J.L. & TECH. 1, 26 (2004).

[183] *Supra* Figure 4.

companies generate the vast majority of the removal requests, and these requests are filed by rights-enforcement service agents who specialize in online copyright enforcement.[184] In other words, the online adjudication of copyright disputes is still dominated by repeat players that acquired the expertise in managing online disputes, while end users may still suffer from the power/knowledge gap.[185]

Another issue is securing due process, namely, the procedural steps that are available to the parties. While some procedures are required by Constitutional due process, others are assumed as part of a fair system for learning and resolving legal disputes.[186]

The N&TD procedures fail to offer sufficient mechanisms for considering the substantive claims of the parties involved, before action is taken against allegedly infringing materials. Thus, the link to the allegedly infringing materials from a Google search is removed automatically upon receipt of the removal request, without any prior check of the substantive claims of the parties involved.

Indeed, the DMCA defines a procedure for alleged infringers to challenge the removal of allegedly infringing materials by filing a counter notice. In practice, however, as shown by this study, this course is rarely taken. This may be due to fear of potential consequences following the filing of a counter notice, lack of knowledge of user rights, or lack of legal expertise.[187]

Moreover, the growing use of voluntary enforcement measures offered by online intermediaries creates another layer of challenge to due process.[188] These voluntary measures are not subject to any of the procedural safeguards offered by the safe harbor of the DMCA, and are often simply governed by the platform's terms of use.

Overall, it is necessary to develop policy measures that would ease access to digital enforcement procedures and secure the rights of the different stakeholders. The N&TD procedures facilitate a fairly liberal, cost-free, and minimal-risk legal environment for filers of notices. Since removal requests can be freely submitted, policy may need to focus on measures that could counterbalance the arbitrary power of notification that results in removal. To encourage users to challenge such notices, policy measures should address the gaps of knowledge and expertise. Such gaps could perhaps be narrowed by providing information and guidance to individual copyright holders and to users online. While this

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[184] *Supra* Figure 4 & Figure 6.

[185] Lack of expertise and Google's deterrence policy regarding counter notices may prevent individuals from participating in digital enforcement activity. *See supra* Part II.B.7.

[186] Thornburg, *supra* note 175, at 196.

[187] *See supra* Part II.B.7.

[188] Niva Elkin-Koren, *supra* note 185, at 1088. YouTube's Content ID is one such example. *How Content ID Works*, *supra* note 185. *See also* Bridy, *supra* note 65, at 187, 189, 191–98 (examining the different methods of DMCA enforcement).

may not completely eliminate the advantages inherent in using rights-enforcement service agents, it may at least lessen the imbalance.

CONCLUSIONS

This study offers several insights into the dynamics involving online enforcement mediated by intermediaries. First, it demonstrates that the safe-harbor regime has failed to adequately advance the overall goals of copyright law. It is not disputed that the internet has led to a significant increase in the illegal use of content.[189] The difficulty of enforcing copyright law in the digital era has forced rights holders to develop and hone a variety of enforcement strategies. Rights holders sought to harness intermediaries to identify, remove, and block allegedly infringing materials based on the N&TD regime.[190] The N&TD regime offered a swift relief to right holders, and the study demonstrated the massive use of this statutory procedure.

Yet, despite the importance attached to the value of intellectual property and to the protection of the rights holders' legitimate interests, other considerations are also at play. These considerations include the importance of securing access to cultural assets and speech resources, as well as the ability to access and freely communicate information online.[191] The study demonstrated that the safe harbor regime has compromised access to legitimate content and thus failed to preserve copyright balance.

The second insight derived from this study applies more generally to the privatization of online enforcement. The attempt to offer immediate first aid to rightholders facing piracy, while deferring legal disputes to courts at a later stage, has proven futile. In practice, the strong incentives for online intermediaries to remove content upon receiving a removal request has turned the N&TD regime into a robust clean-up mechanism that operates by removing large quantities of

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[189] *See, e.g.*, Robin Andrews, Note, *Copyright Infringement and the Internet: an Economic Analysis of Crime*, 11 B.U.J. SCI. & TECH. L. 256, 258 (2005) ("Recent technological advances such as music and video compression and high-speed Internet connections have . . . . enabled more effective and profitable piracy."); Don E. Tomilson, *Intellectual Property in the Digital Age: The Piracy/Counterfeiting Problem and Antipiracy and Anticounterfeiting Measures*, 8 CURRENTS: INT'L TRADE L.J. 3, 3 (1999) ("[T]echnological advances have made the life of the intellectual-property pirate much better . . . .").

[190] *See supra* Part I.B (noting the use of robo notices, which automatically file claims with intermediaries and leave the rest of the N&TD process to the intermediary).

[191] *See supra* Part III.C (discussing the impact of current N&TD procedures on the balance between protecting rights holders and encouraging a free flow of ideas).

allegedly infringing materials automatically, with no consideration of copyright principles, and without any judicial oversight.[192]

Consequently, the N&TD regime results in the unaccountable removal of content as documented in this study. This carries serious implications for access to knowledge, freedom of speech, and access to justice.

Third, this study sheds light on the difficulties involved in monitoring the implementation of N&TD procedures. Online intermediaries are not subject to any disclosure requirements regarding the nature or output of the N&TD procedure. The voluntary GTR, which are intended to provide transparent data on this activity, are only partial and very difficult to analyze and monitor.[193] The analysis of removal requests and their outcomes on such a large scale, not only requires access to data pertaining to the enforcement activity, but also an enormous investment of resources. In the absence of access to data and transparency regarding the implementation of N&TD by each and every intermediary, we cannot expect independent data to shed light on the ramifications of online-enforcement actions. Therefore, it might be necessary to design new measures for oversight, beyond self-reporting and transparency.[194]

Increasing collaboration between online intermediaries and copyright holders, in copyright enforcement, could further jeopardize access to online materials and free flow of information. Such cooperation in enforcing rights outside the courts lacks any assurances for access to knowledge and freedom of speech. This can be especially dangerous in the absence of any oversight regarding the scope of cooperation between intermediaries and rights holders in enforcement campaigns, and in the absence of any judicial oversight over the implementation of enforcement measures.[195]

The robustness of the N&TD regime and the lack of adequate oversight measures, raise concerns regarding potential misuse, and limits on free speech and the free flow of information. They underscore the need to revisit the legal policy pertaining to online enforcement. Such policy should take into account the scale of online disputes and the

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[192] *See id.* (detailing how both intermediaries and rights holders have shifted to using automated takedown systems to remove infringing material).

[193] *See* Maayan Perel & Niva Elkin-Koren, *supra* note 132, 181, 187–88 (2017) (emphasizing that when enforcement data is provided, it is either biased or so immense as to be unintelligible).

[194] *See* Tushnet, s*upra* note 148, at 532 (arguing that the lack of transparency in the algorithmic enforcement of copyright protection necessitates new procedures).

[195] *See supra* Part II.B.2 (discussing a study that revealed that a lack of government oversight led to a misuse of copyright-enforcement procedures). *But see* Michael D. Birnhack & Niva Elkin-Koren, *The Invisible Handshake: The Reemergence of the State in the Digital Environment*, 8 VA. J.L. & TECH. 6 (2003) (warning against unaccountable collaboration between government and online intermediaries in carrying out law enforcement tasks).

automation of enforcement measures as described in this Article. In particular, this study demonstrated the need to develop oversight measures and apply transparency requirements to any form of online copyright enforcement. Such oversight has become essential to ensure the rule of law, where online intermediaries are increasingly burdened with additional enforcement missions.